

Table of Contents

Volume 120: Three Dimensional Imaging (1977)

Editor: Stephen A. Benton

Preface

HUMAN DEPTH PERCEPTION

Geometric and physiological aspects of depth perception

K. Nakayama

Seeing in Depth

R. Gregory

Recent results with dynamic random-dot stereograms

B. Julesz

Spatial limitations of human stereoscopic vision

C. Tyler

Six eyes of man

E. Land

THREE-DIMENSIONAL DISPLAYS

Digital Processing of 3-D Data to Generate Interactive Real-Time Dynamic Pictures

S. Black

Present and potential capabilities of three-dimensional displays using sequential excitation of Fluorescence

C. Verber

An autostereoscopic CRT display

H. Tilton

Wide-angle integral photography

R. de Montebello

Operator performance using conventional or stereo video displays

R. Pepper, R. Cole, D. Smith

Mars Viking 1975 lander interactive computerized video stereophotogrammetry

S. Liebes, Jr., A. Schwartz

HOLOGRAPHIC IMAGING

Projection-type holographic displays

T. Okoshi

Three-dimensional information

N. Abramson

HOLOGRAPHIC DISPLAYS

Recording of large size holograms in photographic emulsion; image reconstruction

J.-M. Fournier, G. Tribillon, J.-C. Vienot

Experiences with large-scale reflection and transmission holography

H. Bjelkhagen

Progress on the holographic movie process in the USSR

V. Koma

Coherence relaxation methods for holography

E. Leith

Imaging properties of holographic stereograms

I. Glaser, A. Friesem

Holographic terrain displays

M. McDonnell

APPLICATIONS TO BIOMEDICAL IMAGING

Three-dimensional displays in biostereometrics

R. Herron

A spinning mirror auto-stereoscopic display

W. Simon, T. Walters

The synthalyzer for three-dimensional synthesis, and analysis by optical dissection

R. de Montebello

Three-dimensional viewing of tomographic data: The Tomax system

H. Mark, F. Hull

Direct measurement of red blood cell profiles

M. Eden, W. Simon

The other role of vergence eye movements

A. Cogan

Very high resolution stereoscopic television

J. Butterfield

Volume 212: Optics and Photonics Applied to Three-Dimensional Imagery (1979)

Editors: Michel Grosmann, Patrick Meyrueis

Preface

ADVANCES IN HOLOGRAPHY

One-step white-light transmission holography

S. Benton, H. Mingace, Jr., W. Walter

Reflection-transmission holograms and their application

E. Lioubimov, N. Kirillov

Modulation mechanisms in the holographic display

N. Phillips, P. Gwynn, A. Ward

Holographic image degradation due to wavefront defects

O. Soares, A. Leite

Devices, tuning and quality control in dichromated gelatin (DCG)

R. Rallison

Utilization of dichromated gelatin in holography

R. Gzrimala, C. Liegeois

Distortions of reconstructed images from cylindrical holographic stereograms

K. Okada, T. Honda, J. Tsuhiuchi

3-D IMAGING WITHOUT LASER

On the comparison of the sensitivity in ordinary photographic recording in holography

V. B. Konstantinov

Survey of three-dimensional television

J. Butterfield

Lenticular sheet 3-D pictures and 3-D projections

A. Marraud, M. Bonnet, A. Rambourg

ART AND 3-D IMAGING UNDERSTANDING

Axiomatic system theory and optical images

G. Crosta

Exposes on Architectural Images

Architectural images

X. Luccioni

New representation techniques and architectural representation

A. Forgia

The real and its holographic double

G. Rabinovitch

Representation arts

P. Saddy

Volume 367: Processing and Display of Three-Dimensional Data (1982)

Editor: James J. Pearson

Preface

SURVEY OF THREE-DIMENSIONAL PERCEPTION AND DISPLAY

Texton theory of two-dimensional and three-dimensional vision

B. Julesz

Computer techniques for the representation of three-dimensional data on a two-dimensional display

G. Herman, R. Reynolds, J. Udupa

Survey of holographic stereograms

S. Benton

Stereoscopic displays

B. Lane

STEREOSCOPIC DISPLAYS AND PROCESSING

Real-time depth measurement in a stereoscopic television display

M. Robinson, S. Sood

Viewpoint dependent imaging: an interactive stereoscopic display

S. Fisher

Target identification using three-dimensional features

C. Bjorklund, R. Loe

Application of an n-dimensional algebra to processing battlefield obscuration stereo-pair video data

R. De Kinder, G. Blackman, L. Gibson

Transmission and storage bandwidth reduction for spatial image data associated with three-dimensional television systems with parallax

D. Hudgins

Processing of multidimensional signals by coherent optics

R. Bamler, J. Hofer-Alfeis

APPLICATIONS

Application of holographic stereograms to three-dimensional data display

L. Huff, R. Fusek

Construction, display, and manipulation of three-dimensional models of biopolymers

R. Ladner

Interactive three-dimensional computer space

C. Schmandt

Computer animation of three-dimensional time-varying meteorological fields

R. Grotjahn

Digital holographic displays of medical CT images

R. Perlmutter, J. Goodman, A. Macovski

Design of and image editing with a space-filling three-dimensional display based on a standard raster graphics system

H. Fuchs, S. Pizer, E. Heinz, S. Bloomberg, L.-C. Tsai, D. Strickland

TRUE THREE-DIMENSIONAL DISPLAYS AND PROCESSING

Digital perspective correction for cylindrical holographic stereograms

S. M. Jaffey, K. Dutta

True three-dimensional display of computer data

H. Stover

Clinical verifocal mirror display system at the University of Utah

S. Johnson, R. Anderson

Multiple exposure holographic display of CT medical data

K. Johnson, L. Hesselink, J. Goodman

Interactive three-dimensional display and interpretation of a complex physical model

D. Fisher, G. Gardner, H. Nelson, Jr., R. Verm

Two-pass warp algorithm for hardware implementation

M. Shantz

Volume 391: Optics in Entertainment (1983)

Editor: Chris Outwater

Preface

THREE-DIMENSIONAL IMAGING

Photographic holography

S. Benton

Review of color holography

K. Bazargan

Mass produced holograms for the entertainment industry

S. McGrew

Psychophysical assessment of depth in holographic images

A. Frey, R. Frey

The history of stereoscopy in art, science, and entertainment

L. Parker

3-D television without glasses: on standard bandwidth

R. Collender

White-light transmission color holographic imaging

F. Yu, G. Gerhart

Volume 402: Three-Dimensional Imaging (1983)

Editors: Jean Ebbeni, André Monfils

Preface

HOLOGRAPHY I

Binocular depth perception

G. Hermans

On the fundamentals of 3-D display

A. Lohmann, N. Streibl

Holography and other 3D techniques: actual developments and impact on business

J.-L. Tribillon

Colour reflection holography

N. Phillips

The laser button: a novel approach to the large scale replication of holograms

J. Cowen

Multiplex holograms made of computer processed images

K. Okada, T. Honda, J. Tsujiuchi

Three-dimensional imaging with holographic stereograms

L. Huff, J. Loomis

Multicolor holography of animated scenes by motion synthesis using a multiplexing technique

N. Aebischer, C. Bainier

Hologram copying in dichromated gelatin with sunlight

J. Oliva, A. Fimia, J. Quintana

HOLOGRAPHY II

Designing holographic optical elements (HOE) with large space-bandwidth product

F.-T. Tsai, M.-W. Chan

Influence of spatial and temporal coherence on holography

J. Ebbeni, F. DeSchryver

Spatial 3-D image projection system of holograms and objects

K. Xu

Holographic display devices

L. Hesselink, K. Johnson, R. Perlmutter

Time smear corrected multiplex holographic display of computerized tomography data

K. Dutta, S. Jaffey

Joint transform real time optical correlator using a noncrystalline film of As_2S_3

T. Wang, H. Zheng

OTHER 3-D OPTICAL METHODS I

Compatible 3-D television: the state of the art

K. Balasubramonian, K. Rajappan

Analysis of selected volumetric 3-D imaging systems

K. Balasubramonian, S. Gunasekaran, K. Rajappan, N. Nithiyandam

The hologram as an electronic display

H. Caulfield

Some simple means of realizing 3D images with standard material in diverse fields of medicine, industry and research

B. Jequier

Problems of the use of lenticular screens in tri-dimensional television

M. Chauvierre

Restitution of a stereoscopic picture by means of a lenticular sheet

A. Marraud, M. Bonnet

Transmission of tri-dimensional moving pictures

J. Guichard

Flat panel displays for 3-D imaging

J.-N. Perbet

A liquid crystal sandwich screen for real-time 3-D color display

N. Nithyanandam

OTHER 3-D OPTICAL METHODS II

Three-dimensional images on the cycloramic display

W. Dultz

Three-dimensional radiography from conventional exposures taken at different angles

A. Monfils, M. Henrist

Calibration and depth resolution of a stereoscopic video display

M. Robinson, S. Sood

True three-dimensional display of computer generated images

H. Stover, J. Fletcher

Research issues involved in applying stereoscopic television to remotely operated vehicles

R. Pepper, R. Cole, E. Spain, J. Sigurdson

A three-dimensional image of the cerebral blood vessels and tumor for use in stereotactic neurosurgery

P. Suetens, J. Gybeis, A. Oosterlinck, A. Haegemans, P. Dierckx

A 3-dimensional real-time animation system

O. Fahlander

Differential operator for three-dimensional imaging

A. Lohmann, J. Ojada-Castaneda, N. Streibl

Volume 462: Optics in Entertainment II (1984)

Editor: Chris Outwater

Preface

HOLOGRAPHY

Reflection mounts for transmissions holograms: format compatibility issues

S. Benton

Large format holograms in entertainment applications

C. Outwater, A. Robinson, E. van Hamersveld

Multi-color holography with a single frequency laser utilizing triethanolamine as a pre-exposure agent

S. Smith, T. Cvetkovich

Natural color holographic stereograms by superimposing three rainbow holograms

W. Molteni

The Newport Button: the large scale replication of combined three- and two-dimensional holographic images

J. Cowan

Some optical schemes for display and demonstration

M. Murty

THREE-DIMENSIONAL IMAGING

An overview of three-dimensional motion picture camera systems

C. Condon

Three-dimensional cinematography

S. Hines

Stereoscope 3-D special effects single-camera single-film system

J. Rupkalvis

Visual tasks requiring 3-D stereoscopic displays

J. Merritt

VISIDEP: A three-dimensional imaging system for the unaided eye

A. McLaurin, E. Jones, L. Cathey

Three-dimensional projection with circular polarizers

V. Walworth, S. Bennett, G. Trapani

Volume 507: Processing and Display of Three-Dimensional Data II (1984)

Editor: James J. Pearson

Preface

SURVEY OF THREE-DIMENSIONAL PERCEPTION, PROCESSING AND DISPLAY

An analysis of 3-D display strategies

T. Budinger

SDF Control of correlation plane structure for 3-D object representation and recognition

W.-T. Chang, D. Casasent, D. Fetterly

Interactive display of 3D-images in PICAP II

R. Lenz, P.-E. Danielsson, B. Gunmundsson

Interactive manipulation of 3D data via a 2D display device

L.-S. Chen, G. Herman, H.-M. Hung, H. Levkowitz, S. Trivedi, J. Udupa

Display and analysis of tomographic volumetric images utilizing a vari-focal mirror

L. Harris, J. Camp

APPLICATIONS I

The diagnostic radiological utilization of 3-D display images

L. Cook, S. Dwyer III, D. Preston, S. Batnitzky, K. Lee

3D graphics for interactive surgical simulation and implant design

P. Dev, L. Fellingham, A. Vassiliadis, S. Woolson, D. White, S. Young

Calculation of correction angles of 3-dimensional vertebral rotations based on bi-plane x-ray

T. Tamaki, E. Umezaki, M. Yamagata, S -I. Inoue

Acronym model based vision in the intelligent task automation project

H. Lim, C. Cowan, D. Chelberg

The evaluation function of minimum resolvable scattering difference for active coherent imaging system

M. Kondo, T. Kirimoto, Y. Ohashi

TECHNIQUES

Display of moving volumetric images

D. Jansson, R. Kosowsky

High-speed interaction on a vibrating mirror 3D display

P. Mills, H. Fuchs, S. Pizer

Stereoscopic electro-optic shutter CRT displays: a basic approach

J. Roess

Binocular symmetries as criteria for the successful transmission of images in the StereoDimensional brand stereoscopic video system

L. Lipton

Holographic 3D image preprocessor for welding control feedback

M. Slater, R. Blake

Geometric modeling with image plane integral (IPI) holography

D. Lacy

APPLICATIONS II

Processing and display for multi-dimensional thunderstorm measurements

C. Mohr, R. Vaughan

Optical analysis software as an application for three-dimensional display

M. Abernathy

Three-dimensional displays in the future flight station

A. Bridges

Digital reconstruction methods for three-dimensional image visualization

S. Jaffey, K. Dutta, L. Hesselink

Application of vanishing points to 3-D measurement

H. Nakatani, R. Weiss, E. Riseman

Perspective stereograms for civil engineering

G. Manzoni, G. Bidoli, G. Manzoni

3D frame buffers for interactive analysis of 3D data

G. Hunter

Volume 761: True Three-Dimensional Imaging Techniques and Display Technologies (1987)

Editors: David F. McAllister, Woodrow E. Robbins

Preface

THREE-DIMENSIONAL IMAGING

Methods for electronic 3D moving pictures without glasses

R. Collender

Liquid-crystal video stereoscope with high extinction ratios, a 28% transmission state and a 100 ms switching

T. Haven

The chromostereoscopic process: a novel single image stereoscopic process

R. Steenblik

Progress in projection of parallax panoramagrams onto wide-angle lenticular screens

R. Borner

Generating images for a time-multiplexed stereoscopic computer graphics system

J. Baker

Alcove holograms for computer-aided design

S. Benton

HUMAN FACTORS ISSUES IN 3D DISPLAY SYSTEMS

Initial investigation into user acceptance of VISIDEP three-dimensional technology

A. McLaurin, E. Jones, Jr., L. Cathey

3D displays and eye movements

K. White, C. Woods, L. Cormack

Factors affecting ghosting in time-multiplexed planostereoscopic CRT display systems

L. Lipton

Stereoscopic perception

R. Clapp

Photointerpreter evaluation of hyperstereographic forward looking infrared (FLIR) sensory imagery

T. Lippert, E. Benser

Visual-motor realism in 3D teleoperator display systems

J. Merritt

Evaluation of input devices for 3D computer display workstations

R. Beaton, R. DeHoff, N. Weiman, P. Hildebrandt

Three-dimensional stereographic pictorial visual interfaces and display systems in flight simulation

A. Bridges, J. Reising

NOVEL METHODS FOR 3D VIEWING

Radiologic applications in holography

D. Lacey

LCD pupil expansion for stereo viewing

B. Radl

Use of lenses to enhance depth perception

L. Noble

Single-source three-dimensional imaging from a moving platform

E. Jones, Jr., L. Cathey, A. McLaurin

True three-dimensional animation in motion pictures

C. Mayhew

3D APPLICATIONS

Maintenance of 3D scene databases using the analytical imagery matching system (AIMS)

S. T. Hovey

Three-dimensional display for quality control of digital cartographic data

L. Hodges, D. McAllister

Three-dimensional display of radiation therapy planning

L. Cook, K. Lee, E. Cytacki, S. Dwyer III

High definition graphics application in fluid flow simulations

G. Bancroft, F. Merritt, P. Buning, V. Watson

3D scene generation on a shared memory parallel processor

R. Kelly

Digital generation of stereoscopic perspective scenes

A. Whiteside, M. Ellis, B. Haskell

True four-dimensional graphics laboratory for nongeometric grid-based data

S. Wixson, R. Garrett, F. Sinak

Volume 902: Three-Dimensional Imaging and Remote Sensing Imaging (1988)

Editor: Woodrow E. Robbins

Preface

3-D IMAGING: NEW TECHNOLOGIES AND NOVEL TECHNIQUES

Varifocal mirror display integrated into a high-speed image processor

L. Harris

SpaceGraph, a true 3-D PC peripheral

L. Sher

Nineteen-inch parallaxscope

H. Tilton

Collimated view multiplexing: a new approach to 3-D

J. Kollin

Push-pull liquid crystal modulator for electronic stereoscopic display

L. Lipton, A. Berman

Chromostereoscopic CRT-based display

L. Hodges, D. McAllister

3-D IMAGING: HUMAN FACTORS ISSUES IN 3-D DISPLAY SETTINGS

Often-overlooked advantages of 3-D displays

J. Merritt

Effects of long-term viewing of VISIDEP 3-D television

A. McLaurin, E. Jones, Jr.

User evaluation of cursor-positioning devices for 3-D display workstations

R. Beaton, N. Weiman

Advanced concepts in device input for 3-D display

R. Burton, S. Becker, J. Broekhuijsen, B. Hale, A. Richardson

3-D displays and user interface design for a radiation therapy treatment planning CAD tool

C. Mosher, Jr., G. Sherouse, E. Chaney, J. Rosenman

3-D IMAGING: APPLICATIONS

Implementation of true 3-D cursors in computer graphics

D. Butts, D. McAllister

3-D measurements from video stereo pairs

M. Weissman

Human hand model calibration using 3-D reconstruction from multiple silhouette views

E. Petajan, D. Baraff, J. Weil

Holographic stereograms generated with a liquid crystal spatial light modulator

J. Andrews, B. Tuttle, M. Rainsdon, R. Damm, K. Thomas, W. Haas

Algorithms and display techniques for 4-D Cartesian graphics

R. Burton

3-D display of magnetic resonance imaging of the spine

A. Nelson, Y. Kim, R. Haralick, P. Anderson, R. Johnson, L. DeSoto

Managing windows as transparent PAGES in a stereoscopic display

S. Wixson, M. Sloane

IMAGE PROCESSING FOR REMOTE SENSING

Automated segmentation of pseudoinvariant features from multispectral imagery

C. Salvaggio, J. Schott

Multimodality imaging, expert, and biomechanical systems used in cranial facial pain

R. Taylor

Image processing system for automatic retina diagnosis

N. Katz, M. Goldbaum, M. Nelson, S. Chaudhuri

Automatic frequency control of pulsed CO₂ lasers

R. Nordstrom

Information extraction from multimodality medical imaging

B. Engelstad, H. Meyer, W. Hanson, W. O'Connell, R. Taylor, R. Bernstein

Computerized analysis and information extraction of medical magnetic resonance images (MRI)

R. DeLaPaz, R. Bernstein

Volume 1083: Three-Dimensional Visualization and Display Technologies (1989)

Editors: Woodrow E. Robbins, Scott S. Fisher

Preface

Part I: Non-Holographic True Three-Dimensional Display Technologies

NON-HOLOGRAPHIC TRUE THREE-DIMENSIONAL DISPLAY TECHNOLOGIES

Stereoscopic CAD and environmental sculpture: enhancement of the design process in the visual arts

R. Fisher, P. Bandini

Stereo TV improves remote manipulator performance

R. Cole, D. Parker

Experience with stereoscopic display devices and output algorithms

J. Lipscomb

Voice-controlled stereographic video camera system

G. Goode, M. Phillips

Exploring virtual worlds with head-mounted displays

J. Chung, M. Harris, F. Brooks, H. Fuchs, M. Kelley, J. Hughes, M. Ouh-young, C. Cheung, R. Hollow

Low cost design alternatives for head-mounted stereoscopic displays

S. Martin, R. Hutchinson

NOVEL APPROACHES FOR THREE-DIMENSIONAL DISPLAY

Chromostereoscopic microscopy

R. Steenblik

Computer-generated barrier-strip autostereography

D. Sandin, E. Sandor, W. Cunnally, M. Resch, T. DeFanti, M. Brown

Everyman's real-time real 3-D

H. Tilton

Parallax barrier 3-D TV

I. Sexton, D. Crawford

Compatibility of stereoscopic video systems with broadcast television standards

L. Lipton

Computer-generated lenticular stereograms

S. Love, D. McAllister

Part II: Three-Dimensional Visualization of Scientific Data

THREE-DIMENSIONAL PROCESSING AND DISPLAY FOR VISUALIZATION I

Three-dimensional measurement, display, and interpretation of fluid flow data sets

M. Yoda, L. Hesselink

Environment for distributed visualization

H. Anderson, J. Berton, Jr., B. Helfer Dean

VERITAS visualization environment research in the applied sciences

A. Giacalone, J. Heller, A. Kaufman, M. Kifer, P. Lewis, P. Mishra, I. Ramakrishnan, S. Smolka, D. Warren

Statistical characteristics of stereoscopic images for image coding

H. Yamaguchi, Y. Tatehira, K. Akiyama, Y. Kobayashi

THREE-DIMENSIONAL PROCESSING AND DISPLAY FOR VISUALIZATION II

Automated analysis of fluid flow technology

J. Helman, L. Hesselink

Visualization of complex data

E. Farrell, Z. Christidis

Tools for 3-D scientific visualization in computational aerodynamics at NASA/Ames Research Center

G. Bancroft, T. Plessel, F. Merritt, V. Watson

Unified approach to the design of visualization software for the analysis of field problems

R. Dickinson

Three-dimensional optical tomographic measurements of mixing fluids

R. Snyder, L. Hesselink

Cube system as a 3-D medical workstation

A. Kaufman, R. Bakalash

USER INTERFACE ISSUES IN VISUALIZATION

Using electronic stereoscopic color displays: limits of fusion and depth discrimination

Y.-Y. Yeh, L. Silverstein

Perceptual issues in scientific visualization

M. Kaiser, D. Proffitt

Optimal display factors in stereoscopic TV images for human stereoscopic vision

Y. Tatehira, H. Yamaguchi, K. Akiyama, Y. Kobayashi

Visions of visualization aides: design philosophy and observations

S. Ellis

UIMX: a user interface management system for scientific computing with x windows

M. Foody

Scientific work environments in the next decade

J. Gomez

VISUALIZATION APPLICATIONS

Alternative representation of visual space

A Arditi

Digital perspective generation and stereo display of composite ocean bottom and coastal terrain images

K. Smedley, B. Haines, D. Van Vactor, M. Jordan

Visualization management system approach to visualization in scientific computing

D. Butler, M. Pendley

GeoRGE-3D: A minicomputer-based system for interactive 3-D rendering of digital environmental data sets

T. Vonder Haar, D. Reinke, S. Naqvi

Visualization tools for industrial design problems applied to electron optics

J. Alexander, D. Bechis, N. Winarsky, R. Alonso, D. Laur

Alternative views of a hurricane

R. Marshall, P. Carswell

Volume 1256: Stereoscopic Displays and Applications (1990)

Chairs: John O. Merritt, Scott S. Fisher

Preface

USER INTERFACE ISSUES IN STEREOSCOPIC DISPLAYS

Three-dimensional stereoscopic display implementation: guidelines derived from human visual capabilities [1256-1]

C. Wickens

Comparison of depth cues for relative depth judgments [1256-2]

W. Reinhart, R. Beaton, H. Snyder

Perspectives on stereo [1256-3]

T. Tessman

Focused and divided attention in stereoscopic depth [1256-4]

C. Wickens, A. Kramer, J. Andersen, A. Glasser, K. Sarno

3-D displays for cockpits: where they pay off [1256-5]

J. Reising, K. Mazur

Effect on real-world depth perception from exposure to heads-down stereoscopic flight displays [1256-6]

A. Busquets, S. Williams, R. Parrish

Perspective and stereo for projection from and display of four dimensions [1256-7]

W. Armstrong, R. Burton

New morphological algorithm for automated interpolation of height grids from contour images [1256-8]

S. Petersen, W. Barrett, R. Burton

New computational control techniques and increased understanding for stereo 3-D displays [1256-9]

S. Williams, R. Parrish

Characterization and categorization of higher-dimensional presentation techniques [1256-10]

E. Cluff, R. Burton, W. Barrett

3-D VISUALIZATION

Defining, modeling, and measuring system lag in virtual environments [1256-12]

S. Bryson, S. Fisher

Volume visualization on a stereoscopic display [1256-13]

S. Wixson

Head-coupled remote stereoscopic camera system for telepresence applications [1256-14]

M. Bolas, S. Fisher

Stereoscopic displays for terrain database visualization [1256-15]

H. Veron, D. Southard, J. Leger, J. Conway

Implementation and integration of a counterbalanced CRT-based stereoscopic display for interactive viewpoint control in virtual-environment applications [1256-16]

I. McDowall, M. Bolas, S. Pieper, S. Fisher, J. Humphries

Doing it directly: the experiential design of cyberspaces [1256-17]

R. Walser

NEW DEVELOPMENTS IN 3-D DISPLAYS

Autostereoscopic display for use with a personal computer [1256-18]

J. Eichenlaub

Inexpensive driver for stereo videogame glasses [1256-19]

M. Pique, A. Coogan

The Eyephone: a head-mounted stereo display [1256-20]

M. Teitel

Parallel-axes graphics using Lincoln's log method as an alternative to binocular parallax graphics [1256-21]

D. Curtis, R. Burton

Autostereogram [1256-22]

C. Tyler, M. Clarke

Sculptbox: a volumetric environment for interactive design of three-dimensional objects [1256-23]

A. Richardson, R. Burton, W. Barrett

Wide-angle orthostereo [1256-33]

E. Howlett

APPLICATIONS OF STEREOSCOPIC DISPLAYS

3-D TV system for remote handling: development and evaluation [1256-24]

A. Dumbreck, E. Abel, S. Murphy

Videotape recording of 3-D television pictures [1256-25]

P. Scheiwiller, A. Dumbreck, A. Chapman

Stereo advantage for a peg-in-hole task using a force-feedback manipulator [1256-26]

E. Spain

Remote-manipulator tasks impossible without stereo TV [1256-27]

R. Cole, J. Merritt, S. Fore, P. Lester

Portable low-cost devices for videotaping, editing, and displaying field-sequential stereoscopic motion pictures and video [1256-37]

M. Starks

2-D/3-D comparison using commercial vision products [1256-38]

D. Miller, T. Mitchell

Irrelevance reduction of the depth information in stereo images [1256-35]

B. Kost

Perfect 3-D movies and stereoscopic movies on TV and projection screens: an appraisal [1256-36]

S. Klein, W. Dultz

NEW APPROACHES TO 3-D DISPLAYS

Some preliminary results on using spatial locality to speed up ray tracing of stereoscopic images [1256-30]

J. Ezell, L. Hodges

3-D endoscopy through alternating-frame technology [1256-31]

A. McLaurin, E. Jones, J. Mason

New advances in computer-generated barrier-strip autostereography [1256-32]

S. Meyers, D. Sandin, W. Cunnally, E. Sandor, T. DeFanti

Volume 1457: Stereoscopic Displays and Applications II (1991)

Chairs: John O. Merritt, Scott S. Fisher

Preface

SOFTWARE FOR STEREOSCOPIC DISPLAYS

Compact zoom lens for stereoscopic television [1457-35]

P. Scheiwiller, S. Murphy, A. Dumbreck

Basic principles of stereographic software development [1457-1]

L. Hodges

Comparison of stereoscopic cursors for the interactive manipulation of B-splines [1457-2]

P. Barham, D. McAllister

Interpolation of stereo data using Lagrangian polynomials [1457-3]

R. Bachnak, J. Yamout

Stereoscopic ray tracing of implicitly defined surfaces [1457-4]

R. Devarajan, D. McAllister

Generation of synthetic stereo views from digital terrain models and digitized photographs [1457-5]

J. Bethel

Development of a stereoscopic three-dimensional drawing application [1457-6]

D. Carver, D. McAllister

Recovering epipolar geometry in 3-D vision systems [1457-7]

T. Schenk, C. Toth

STEREOSCOPIC DISPLAY APPLICATIONS

3-DTV research and development in Europe [1457-9]

R. Sand

Comparison of 3-D display formats for CAD applications [1457-10]

S. McWhorter, L. Hodges, W. Rodriguez

Effects of alternate pictorial pathway displays and stereo 3-D presentation on simulated transport landing approach performance [1457-11]

A. Busquets, R. Parrish, S. Williams

Stereoscopic versus orthogonal view displays for performance of a remote manipulation task [1457-12]

E. Spain, K. Holzhausen

Teleoperator performance with virtual window display [1457-13]

R. Cole, J. Merritt, R. Coleman, C. Ikehara

Remote driving: one eye or two [1457-14]

K. Bryant, I. Ince

Perceptual training with cues for hazard detection in off-road driving [1457-15]

J. Merritt, V. CuQlock-Knopp

VIRTUAL ENVIRONMENTS: RESEARCH AND APPLICATIONS

Computational model for the stereoscopic optics of a head-mounted display [1457-18]

W. Robinett, J. Rolland

Virtual environment for the exploration of three-dimensional steady flows [1457-19]

S. Bryson, C. Levit

Elements of real-space imaging: a proposed taxonomy [1457-20]

M. Naimark

Interaction of objects in a virtual environment: a two-point paradigm [1457-21]

S. Bryson

Virtual environment system for simulation of leg surgery [1457-22]

S. Pieper, S. Delp, J. Rosen, S. Fisher

Practical low-cost stereo head-mounted display [1457-23]

R. Pausch, P. Dwivedi, A. Long

HUMAN-FACTORS ISSUES IN STEROSCOPIC DISPLAYS

Image quality metrics for volumetric laser displays [1457-24]

R. Williams, D. Donohoo

Depth cueing for visual search and cursor positioning [1457-25]

W. Reinhart

Color quantization aspects in stereopsis [1457-26]

P. Hebbbar, D. McAllister

Luminance asymmetry in stereo TV images [1457-27]

I. Beldie, B. Kost

Some effects on depth-position and course-prediction judgments in 2-D and 3-D displays [1457-28]

R. Miller, R. Beaton

Effect of viewing distance and disparity on perceived depth [1457-29]

L. Gooding, M. Miller, J. Moore, S. Kim

User benefits of visualization with 3-D stereoscopic displays [1457-39]

A. Wichansky

NEW DEVELOPMENTS IN STEROSCOPIC DISPLAY TECHNOLOGIES

Selection devices for field-sequential stereoscopic displays: a brief history [1457-31]

L. Lipton

Electro-optical autostereoscopic displays using large cylindrical lenses [1457-32]

T. Hattori

Progress in autostereoscopic display technology at Dimension Technologies Inc. [1457-33]

J. Eichenlaub

Positioning accuracy of a virtual stereographic pointer in a real stereoscopic video world [1457-38]

D. Drascic, P. Milgram

Simplified pupil enlargement technique [1457-36]

B. Radl

Three-dimensional imaging laparoscope [1457-37]

E. Jones, A. McLaurin, J. Mason

Use of flicker-free television products for stereoscopic display applications [1457-40]

A. Woods, T. Docherty, R. Koch

Stereoscopic video and the quest for virtual reality: an annotated bibliography of selected topics [1457-41]

M. Starks

Volume 1669: Stereoscopic Displays and Applications III (1992)

Chairs: John O. Merritt, Scott S. Fisher

Preface

SESSION 1

Distortions in stereoscopic displays [1669-1]

A. Ariyaeinia

Construction of intermediate pictures for a multiview 3D system [1669-2]

L. Jin, R. Skerjanc

Minimizing absolute parallax in a stereo image [1669-3]

D. McAllister

Automatic software control of display parameters for stereoscopic graphics images [1669-4]

R. Akka

Problems with lossy compression of stereo pairs [1669-5]

L. Harrison, D. McAllister

Inference of three-dimensional structure from weak perspective projections based on pairwise comparisons of images [1669-6]

L. Kontsevich

Random set approach to 3D scene reconstruction by stereoscopic vision [1669-7]

P. Quinio

Combining motion blur and stereo [1669-29]

M. Patel, D. McAllister

SESSION 2

Head-tracking stereo display: experiments and applications [1669-8]

W. Paley

Gray-scale requirements for antialiasing of stereoscopic graphic imagery [1669-10]

W. Reinhart

Temporal sampling requirements for stereoscopic displays [1669-11]

M. Green

Spatiotemporal limitations on vernier and stereoscopic alignment acuity [1669-12]

C. Tyler, C. Schor, N. Coletta

Adaptation effects in stereo due to on-line changes in camera configuration [1669-13]

P. Milgram, M. Krueger

Effects of test structure on depth perception measurement tasks [1669-14]

C. Ikehara, R. Cole, J. Merritt

Monocular depth cues in conflict with the stereoscopic parallax on the television screen [1669-27]

S. Klein, W. Dultz

Three-dimensional target designation using two control devices and an aiding technique [1669-28]

J. Reising, K. Liggett, C. Rate, D. Hartsock

SESSION 3

Future of autostereoscopic electronic displays [1669-16]

L. Lipton

Further advances in autostereoscopic technology at Dimension Technologies Inc. [1669-17]

J. Eichenlaub

50-inch autostereoscopic full-color 3D TV display system [1669-18]

H. Isono, M. Yasuda, D. Takemori, H. Kanayama, C. Yamada, K. Chiba

Three-Dimensional imaging systems for telecommunications applications [1669-19]

D. Sheat, G. Chamberlin, P. Gentry, J. Leggatt, D. McCartney

High-resolution inserts in wide-angle head-mounted stereoscopic displays [1669-20]

E. Howlett

Advantage of single-lens stereopsis [1669-21]

W. Carter

Monitor selection criteria for stereoscopic displays [1669-22]

L. Meyer

SESSION 4

Stereoscopic video and the quest for virtual reality: an annotated bibliography of selected topics, part II [1669-23]

M. Starks

Low-cost helmet-mounted camera/display system for field testing teleoperator tasks [1669-25]

R. Cole, C. Ikehara, J. Merritt

SESSION 5

User evaluation of a stereoscopic display for space-training applications [1669-26]

A. Gorski

Measurement and calibration of static distortion of position data from 3D trackers [1669-9]

S. Bryson

Virtual environment display for a 3D audio room simulation [1669-31]

W. Chapin, S. Foster

Volume 1915: Stereoscopic Displays and Applications IV (1993)

Editors: John O. Merritt, Scott S. Fisher

Preface

SESSION 1

Stereoscopic display employing head-position tracking using large format lenses [1915-1]

T. Hattori

Stereoscopic real-time and multiplexed video system [1915-2]

L. Lipton

Interactive volume-scanning 3D display with an optical relay system and multidimensional input devices [1915-3]

K. Kameyama, K. Ohtomi, Y. Fukui

New realistic 3D surface microtopography visualization technique [1915-4]

Y. Xu, C. Ai

Telecommunications applications for 3D imaging systems [1915-5]

D. McCartney, D. Sheat, G. Chamberlin, D. Travis

Image distortions in stereoscopic video systems [1915-6]

A. Woods, T. Docherty, R. Koch

Effects of perspective distortion in stereoscopic video displays [1915-7]

C. Ikehara, R. Cole, J. Merritt

Using stereoscopic video for defense teleoperation [1915-8]

D. Drascic, J. Grodski

SESSION 2

Training pilots to visualize large-scale spatial relationships in a stereoscopic display [1915-9]

L. Mowafy, R. Thurman

Interactive design of rational Bezier tensor product surfaces in stereo [1915-10]

J. Wright, D. McAllister

Interactive manipulation of quadric surfaces in stereo [1915-11]

J. Taylor, D. McAllister

Binocular interaction neural network model using parallel channel architecture [1915-12]

T. Lee, C. Guest

Cyclopean stereo vision for depth perception [1915-13]

C. Yeh, S. Wang

Edge-pixel-based stereo correspondence through ordering-oriented neural networks [1915-14]

P. Siy, J. Hu

New 3D from 2D visual display process [1915-16]

K. Dunkley

Low-cost universal stereoscopic virtual reality interfaces [1915-17]

M. Starks

Utilizing 6D head-tracking data for stereoscopic computer-graphics perspective transformations [1915-18]

R. Akka

Effects of lag and frame rate on various tracking tasks [1915-19]

S. Bryson

Visual-motor correspondence in stereoscopic video displays for teleoperated manipulator tasks [1915-20]

C. Ikehara, R. Cole, J. Merritt

Developments in autostereoscopic technology at Dimension Technologies Inc. [1915-21]

J. Eichenlaub

Volume 2177: Stereoscopic Displays and Virtual Reality Systems (1994)

Editors: Scott S. Fisher, John O. Merritt, Mark T. Bolas

Preface

Part A: Stereoscopic Displays and Applications V

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS TECHNOLOGIES I

Autostereoscopic display with high brightness and power efficiency [2177-1]

J. Eichenlaub

System performance requirements for a head-tracking autostereoscopic display [2177-2]

T. Touris

Interactive stereoscopic image display system for personal computers [2177-3]

A. Miyazawa, K. Shimizu, K. Sugimoto

HDTV single camera 3D system and its application in microsurgery [2177-4]

R. Mochizuki, S. Kobayashi

Combined motion and depth estimation based on multiocular image sequences for 3DTV [2177-5]

R. Skerjanc

Human factor requirements for a stereoscopic television service: admissible contrast differences between the two channels of a stereoscopic camera [2177-6]

J. Fournier, T. Alpert

SOFTWARE ISSUES IN STEREOSCOPIC DISPLAYS

Geometry of binocular imaging [2177-8]

V. Grinberg, G. Podnar, M. Siegel

Processing of stereo image pairs: elimination of depth planes using the 'cut-plane' procedure [2177-9]

R. Ledley, R. Frye

Depth painting: the interactive transformation of existing images into stereoscopic 3D [2177-10]

P. Hoberman

Stereoscopic imaging in a window on a computer monitor: a new implementation of an old idea [2177-11]

M. Weissman

Reducing crosstalk between stereoscopic views [2177-12]

J. Lipscomb, W. Wooten

Digital correction of keystone caused by image translation [2177-13]

D. McAllister

Data compression of an autostereoscopic 3D image [2177-14]

T. Fujii, H. Harashima

Viewing model for stereoscopic head-mounted displays [2177-50]

D. Southard

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS TECHNOLOGIES II

High-resolution immersion viewer [2177-16]

L. Lipton

Study on a stereoscopic display system employing eye-position tracking for multi-viewers [2177-17]

N. Tetsutani, K. Omura, F. Kishino

Stereoscopic liquid crystal display I (general description) [2177-18]

T. Hattori, S. Sakuma, K. Katayama, S. Omori, M. Hayashi, M. Yokoi

Stereoscopic liquid crystal display II (practical application) [2177-19]

Y. Nishida, T. Hattori, S. Sakuma, K. Katayama, S. Omori, T. Fukuyo

Single-camera three-dimensional laparoscopic system [2177-20]

E. Jones, A. McLaurin

Three-dimensional x-ray display techniques [2177-21]

J. Evans, S. Godber, M. Robinson

X-ray stereoscopy in real time with Reverse Geometry X-ray imaging [2177-22]

R. Albert, T. Albert

Performance evaluation of viewpoint-controlled displays for teleoperated robots [2177-46]

R. Browse, S. Little

STEREOSCOPIC DISPLAY APPLICATIONS

[Novel 3D stereoscopic imaging technology \[2177-23\]](#)

S. Faris

[Voxel-based spatial display \[2177-24\]](#)

D. MacFarlane, G. Schultz, P. Higley, J. Meyer

[Field trials of stereoscopic video with an underwater remotely operated vehicle \[2177-25\]](#)

A. Woods, T. Docherty, R. Koch

[Design of studies to test the effectiveness of stereo imaging truth or dare: is stereo viewing really better? \[2177-26\]](#)

J. Hsu, Z. Pizlo, C. Babbs, D. Chelberg, E. Delp

[Effective use of stereoptic 3D cueing to declutter complex flight displays \[2177-27\]](#)

S. Williams, R. Parrish, D. Nold

[Stereoscopic system for measuring particle trajectories past an underwater model \[2177-28\]](#)

H. Liu, M. Weissman, G. White, G. Miner, W. Gustafson

[Stereoscopic viewing of atomic structures \[2177-29\]](#)

V. Duvanenko, W. Robbins

[Panoramic line-scan imaging system for teleoperator control \[2177-30\]](#)

S. Godber, R. Petty, M. Robinson, J. Evans

[Compression of stereo image pairs and streams \[2177-47\]](#)

M. Siegel, P. Gunatilake, S. Sethuraman, A. Jordan

[Virtual endoscope \[2177-48\]](#)

A. McLaurin, E. Jones

Part B: The Engineering Reality of Virtual Reality

ENABLING TECHNOLOGIES I

[Self-tracking of human motion for virtual reality systems \[2177-31\]](#)

D. Strickland, A. Patel, C. Stovall, J. Palmer, D. McAllister

[New approaches in magnetic sensing for tracking devices \[2177-32\]](#)

M. Clymer, G. Graves

[Portable virtual environment generator: InterFACE \[2177-45\]](#)

D. Frerichs

ENABLING TECHNOLOGIES II

[Interactive stereoscopy optimization for head-mounted displays \[2177-34\]](#)

P. Min, H. Jense

[Color and high-resolution head-mounted display \[2177-35\]](#)

K. Fukai, H. Amafuji, Y. Murata

[Proliferation of counterbalanced, CRT-based stereoscopic displays for virtual environment viewing and control \[2177-36\]](#)

M. Bolas, E. Lorimer, I. McDowall, R. Mead

BUILDING APPLICATIONS I

[Dynamic gesture recognition using neural networks: a fundament for advanced interaction construction \[2177-38\]](#)

K. Boehm, W. Broll, M. Sokolewicz

Virtual devices: tools to remotely develop virtual environments [2177-39]

W. Sherman

Gestural interaction in a virtual environment [2177-40]

R. Jacoby, M. Ferneau, J. Humphries

Hands-off interaction with menus in virtual spaces [2177-41]

R. Darken

Object-level parallelism in a virtual environment architecture [2177-49]

D. Southard

BUILDING APPLICATIONS II

Virtual reality and virtual bodies [2177-42]

C. Richards, L. Korba, C. Shaw, M. Green

Menagerie: designing a virtual experience [2177-43]

S. Fisher, S. Amkraut, M. Girard, M. Trayle

Computer animation for minimally invasive surgery: computer system requirements and preferred implementations [2177-44]

S. Pieper, M. McKenna, D. Chen, I. McDowall

Tools and metatools for interacting with a virtual environment [2177-51]

H. Sowizral

Volume 2409: Stereoscopic Displays and Virtual Reality Systems II (1995)

Editors: Scott S. Fisher, John O. Merritt, Mark T. Bolas

Preface

Part A: Stereoscopic Displays and Applications VI

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS TECHNOLOGIES I

Three-dimensional (3D) imaging systems for video communication applications [2409-1]

M. Jewell, G. Chamberlin, D. Sheat, P. Cochrane, D. McCartney

Viewpoint-dependent stereoscopic display using interpolation of multiviewpoint images [2409-2]

A. Katayama, K. Tanaka, T. Oshino, H. Tamura

Head-tracked stereoscopic display using image warping [2409-3]

L. McMillan, G. Bishop

New autostereoscopic display system [2409-4]

D. Ezra, G. Woodgate, B. Omar, N. Holliman, J. Harrold, L. Shapiro

On-the-wall stereoscopic liquid crystal display [2409-5]

T. Hattori

Autostereoscopic-projection displays [2409-6]

J. Eichenlaub, J. Hutchins

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS TECHNOLOGIES II

Three-dimensional projection systems with vertical enhancement [2409-7]

L. Noble

Stereoscopic imaging via rotation and translation [2409-8]

M. Weissman

Three-dimensional (3D) textures using stereo kaleidoscopes [2409-10]

D. McAllister, D. Pang

Stereoscopic triangulation control of a robot using wide-angle imaging [2409-11]

W. Walsh, P. Hansen, H. Martin, M. Yamaji

Three-dimensional optical display with movable intervening medium [2409-12]

V. Girnyk, V. Kurashov, Y. Mihyeyev

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS TECHNOLOGIES III

Simplification of infrared illumination of stereoscopic liquid crystal TV [2409-14]

Y. Nishida, T. Hattori, S. Omori, J. Suzuki, K. Katayama, S. Sakuma

Prototype flat panel hologram-like display that produces multiple perspective views at full resolution [2409-15]

J. Eichenlaub, D. Hollands, J. Hutchins

Novel low-cost 2D/3D switchable autostereoscopic system for notebook computers and other portable devices [2409-16]

J. Eichenlaub

Electronic capture and display of full-parallax 3D images [2409-17]

M. Brewin, M. Forman, N. Davies

New three-dimensional visualization system based on angular image differentiation [2409-18]

J. Montes, P. Campoy

Calibration system for a new 3D autostereoscopic device based on angular differentiation [2409-19]

M. Lazaro, J. Montes, P. Campoy, J. Gomez, F. Penafiel, L. Fernandez, R. Aracil

SOFTWARE ISSUES IN STEREOSCOPIC DISPLAYS

Geometry of binocular imaging II: the augmented eye [2409-20]

V. Grinberg, G. Podnar, M. Siegel

Algorithm for dynamic disparity adjustment [2409-21]

C. Ware, C. Gobrecht, M. Paton

Broadcast-quality-stereoscopic video in a time-critical entertainment and corporate environment [2409-22]

J. Gay

Three-dimensional (3D) stereoscopic X windows [2409-23]

S. Safier, M. Siegel

Double-buffering technique for binocular imaging in a window [2409-24]

J. McVeigh, V. Grinberg, M. Siegel

Photogrammetric determination of the location and orientation of a group of cameras for a perspective transformation on a new autostereoscopic display [2409-25]

F. Penafiel, J. Gomez, J. Montes, P. Campoy, J. Fernandez, R. Aracil

Stereoscopic computer graphics for ultrasonic medical data [2409-41]

I. Dautraix, I. Magnin

Part B: The Engineering Reality of Virtual Reality II

ENABLING TECHNOLOGIES I

Video support platform for virtual environment applications [2409-26]

J. Humphries, S. Eriskin, J. Deardon, M. McGreevy, S. Fisher

Diffraction optics for head-mounted displays [2409-27]

W. Welch, M. Feldman, R. TeKolste

Alternative display and interaction devices [2409-28]

M. Bolas, I. McDowall, R. Mead, E. Lorimer, J. Hackbush, C. Greuel

Role of computer vision in augmented virtual reality [2409-29]

R. Sharma, J. Molineros

ENABLING TECHNOLOGIES II

Bridge between developers and virtual environments: a robust virtual environment system architecture [2409-30]

R. Darken, C. Tonnesen, K. Passarella-Jones

Increased productivity through Modeltime behaviors [2409-31]

P. Mlyniec, D. Mapes

Virtual Sensors [2409-43]

H. Sowizral

Time-realistic 3D computer graphics (CG) simulator sight [2409-33]

H. Kamada, K. Hirota, K. Suzuki, A. Tada, A. Yumoto, S. Sasaki

BUILDING APPLICATIONS I

Gloveless interface for interaction in scientific visualization virtual environments [2409-35]

M. Ferneau, J. Humphries

Three-dimensional (3D) object manipulation techniques: immersive versus nonimmersive interfaces [2409-36]

D. Mapes, P. Mlyniec

Embedding the 2D interaction metaphor in a real 3D virtual environment [2409-42]

I. Angus, H. Sowizral

BUILDING APPLICATIONS II

Recent developments in virtual experience design and production [2409-38]

S. Fisher

Bar code hotel: diverse interactions of semi-autonomous entities under the partial control of multiple operators [2409-39]

P. Hoberman

Volume 2653: Stereoscopic Displays and Virtual Reality Systems III (1996)

Editors: Mark T. Bolas, Scott S. Fisher, John O. Merritt

Preface

Part A: Stereoscopic Displays and Applications VII

KEYNOTE ADDRESS

Deep image: 3D in art and science [2653-33]

R. Zone

AUTOSTEREOSCOPIC DISPLAYS

Time-multiplexed color autostereoscopic display [2653-1]

J. Moore, N. Dodgson, A. Travis, S. Lang

Prototype magnified and collimated autostereoscopic displays [2653-2]

J. Eichenlaub

Multiview 3D LCD [2653-3]

C. van Berkel, D. Parker, A. Franklin

Autostereoscopy in industry [2653-4]

J. Eichenlaub, M. Katafiaz

Eye-position tracking stereoscopic display using image-shifting optics [2653-5]

H. Imai, M. Imai, Y. Ogura, K. Kubota

Autostereoscopic display system [2653-6]

P. Harman

Autostereoscopic display using holographic optical elements [2653-7]

D. Trayner, E. Orr

SINGLE-LENS STEREOSCOPY

Single-lens stereoscopy: a historical and technical overview [2653-8]

W. Carter, M. Weissman

Disparity and distortion-free stereoscopic fiberscope [2653-12]

T. Hattori, T. Nakamura, J. Suzuki, M. Kurio, M. Yaegashi, S. Sakuma

Approaches to stereoscopic video based on spatiotemporal interpolation [2653-13]

B. Garcia

New television with 2D/3D image conversion technologies [2653-14]

T. Okino, H. Murata, K. Taima, T. Iinuma, K. Oketani

TELEPRESENCE AND AUGMENTED REALITY

Stereo vision and telepresence [2653-16]

J. Bordas, P. Fuchs, D. Ernadotte

Telerobotic control with stereoscopic augmented reality [2653-18]

A. Rastogi, P. Milgram, D. Drascic, J. Grodski

Perceptual issues in augmented reality [2653-19]

D. Drascic, P. Milgram

Marking spatial parts within stereoscopic video images [2653-20]

C. Belz, K. Boehm, T. Duong, V. Kuehn, M. Weber

STEREOSCOPIC VISION AND HUMAN FACTORS

Geometry of binocular imaging III: wide-angle and fish-eye lenses [2653-21]

V. Grinberg, M. Siegel

Parallax scanning using a single lens [2653-22]

C. Mayhew, A. Bacs

Personal perceptual and cognitive property for 3D recognition [2653-23]

T. Matozaki, A. Tanisita

Predicting remote view performance for tasks with different visual information content [2653-26]

C. Ikehara, R. Cole, J. Merritt

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS AND APPLICATIONS

Disparity estimation with object-contour information for synthesizing intermediate view images [2653-27]

T. Azuma, K. Uomori, A. Morimura

Derivation of 2½-D image models from one-dimensional x-ray image sensors [2653-28]

J. Evans, S. Godber, M. Robinson

Expert system for neurosurgical treatment planning [2653-29]

A. Cheng, S. Chung, J. Kwok

New hardware and software for stereo graphics and video [2653-30]

M. Starks

3D video standards conversion [2653-31]

A. Woods, T. Docherty, R. Koch

Universal electronic stereoscopic display [2653-32]

L. Lipton, J. Halnon

Part B: The Engineering Reality of Virtual Reality 1996

TOOLS AND ANALYSIS

Electronic Mimosa [2653-34]

S. Gupta, M. Datta, V. Rana, S. Grover

Off-axial HMD optical system consisting of aspherical surfaces without rotational symmetry [2653-35]

H. Hoshi, N. Taniguchi, H. Morishima, T. Akiyama, S. Yamazaki, A. Okuyama

Use of force feedback to enhance graphical user interfaces [2653-36]

L. Rosenberg, S. Brave

Evaluating visual and auditory enhancements to a virtual object- manipulation task [2653-37]

K. Nemire

Physiological approach to optimal stereographic game programming: a technical guide [2653-38]

W. Martens, R. McRuer, C. Childs, E. Viirree

Improved temporal response in virtual environments through system hardware and software reorganization [2653-39]

R. Jacoby, B. Adelstein, S. Ellis

Framework for integrating sound into virtual environment interfaces [2653-40]

H. Fouad, J. Hahn

VR + AI= intelligent environments: a synergistic approach to engineering design support [2653-41]

R. Darken, C. Darken

TOOLS AND APPLICATIONS

Frontiers in user interface design: wearable computers [2653-43]

M. Clark

Sculpting 3D worlds with music: advanced texturing techniques [2653-45]

C. Greuel, M. Bolas, N. Bolas, I. McDowall

Stereo Texture Facades [2653-48]

I. McDowall, M. Bolas

Validation and verification of a virtual environment for training naval submarine officers [2653-46]

D. Zeltzer, N. Pioch

Engineering applications of virtual reality [2653-47]

J. Smith, R. Grimes, T. Plant

Volume 3012: Stereoscopic Displays and Virtual Reality Systems IV (1997)

Editors: Scott S. Fisher, John O. Merritt, Mark T. Bolas

Preface

Part A: Stereoscopic Displays and Applications VIII

HUMAN FACTORS AND EVALUATION OF STEREOSCOPIC DISPLAYS

How hyperstereopsis can improve the accuracy of spatial perception: an experimental approach [3012-1]

D. Sipes, V. CuQlock-Knopp, W. Torgerson, J. Merritt

Comparison of a new glasses-free three-dimensional screen, a passive-glasses three-dimensional screen, and a two-dimensional imaging system for use in laparoscopic surgery [3012-2]

P. Salimpour, C. Kim, W. LaMorte, D. Birkett, R. Babayan

Autostereoscopic display for radiotherapy planning [3012-3]

R. Hubbold, D. Hancock, C. Moore

Stereoscopic display using multimedia and depth sense test [3012-4]

J. Wang, Z. Zhang, P. Jia, Z. Ye

Stereoscopic layout of a perspective flight guidance display [3012-5]

M. Hammer, S. Muecke, U. Mayer

Evaluation of a 3D autostereoscopic display for telerobotic operations [3012-6]

B. Lee, M. Katafiaz

Printed circuit board visual inspection performance: a comparative analysis of mono- and stereovision macroscopic views [3012-7]

S. Wiker, K. Stewart, T. Meyers, P. Spielholz

STEREOSCOPIC CAMERA SYSTEMS

Time-multiplexed autostereoscopic camera system [3012-8]

N. Dodgson, J. Moore, S. Lang

Stereoscopic camera system for live-action and sports productions [3012-64]

C. Adkins

Development of a compact underwater stereoscopic video camera [3012-10]

A. Woods, J. Penrose, D. Clark

Sliding-aperture multiview 3D camera-projector system and its application for 3D image transmission and IR to visible conversion [3012-12]

S. Shestak, J. Son, H. Jeon, V. Komar

STEREOSCOPIC IMAGE GENERATION

Conversion system of monocular image sequence to stereo using motion parallax [3012-13]

Y. Matsumoto, H. Terasaki, K. Sugimoto, T. Arakawa

Shape initialization of 3D objects in videoconference scenes [3012-14]

T. Riegel, A. Kaup

Parallax engine: a display generation architecture for motion parallax and stereoscopic display effects [3012-15]

R. Broemmelsiek

Stereoscopic 3D graphics generation [3012-16]

Z. Li, J. Liu, Y. Zan

AUTOSTEREOSCOPIC DISPLAYS

Stereoscopic projection display using curved directional reflection screen [3012-17]

T. Ohshima, O. Komoda, Y. Kaneko, A. Arimoto

Retroreflective screens and their application to autostereoscopic displays [3012-18]

P. Harman

Hologramlike video images by 45-view stereoscopic display [3012-19]

Y. Kajiki, H. Yoshikawa, T. Honda

Developments in autostereoscopic displays using holographic optical elements [3012-20]

D. Trayner, E. Orr

3D image technique with a grating plate on high-resolution CRT [3012-21]

T. Shiroishi, T. Nakagawa, S. Nakata, K. Nishimura

Characterization and optimization of 3D-LCD module design [3012-22]

C. van Berkel, J. Clarke

Observer-tracking autostereoscopic 3D display systems [3012-23]

G. Woodgate, D. Ezra, J. Harrold, N. Holliman, G. Jones, R. Moseley

Research of 3D display using anamorphic optics [3012-24]

K. Matsumoto, T. Honda

Autostereoscopic video display with motion parallax [3012-25]

S. Hines

STEREOSCOPIC IMAGE FORMATS AND COMPRESSION METHODS

Compression of full-parallax integral 3D-TV image data [3012-26]

M. Forman, A. Aggoun

Compression and interpolation of 3D stereoscopic and multiview video [3012-27]

M. Siegel, S. Sethuraman, J. McVeigh, A. Jordan

Stereo-vision formats for video and computer graphics [3012-28]

L. Lipton

NEW DEVELOPMENTS IN STEREOSCOPIC DISPLAYS

Full-color 3D prints and transparencies [3012-30]

J. Scarpetti, P. DuBois, R. Friedhoff, V. Walworth

New color anaglyph method [3012-31]

T. Hattori, E. Arita, T. Nakamura, M. Kurio, S. Sakuma

Focus-distance-controlled 3D TV [3012-32]

N. Yanagisawa, K. Kim, J. Son, T. Murata, T. Orima

Emitting diagram control method for solid-object 3D display [3012-33]

J. Son, S. Shestak, Y. Choi, K. Kim

APPLICATIONS OF STEREOSCOPIC DISPLAYS

Lightweight, compact 2D/3D autostereoscopic LCD backlight for games, monitor, and notebook applications [3012-34]

J. Eichenlaub

Real-Depth imaging: a new 3D imaging technology with inexpensive direct-view (no glasses) video and other applications [3012-35]

E. Dolgoff

Role of stereoscopic imaging in the astronomical study of nearby stars and planetary systems [3012-36]

D. Mark, C. Waste

3D moviemap and a 3D panorama [3012-38]

M. Naimark

POSTER SESSION

Task-dependent use of binocular disparity and motion parallax information within telepresence and quasi-natural environments [3012-40]

A. Parton, M. Bradshaw, J. Pretlove, B. De Bruyn, I. Davies

Effects of image resolution on depth perception in stereo and nonstereo images [3012-41]

K. Jaeae-Aro, L. Kjelldahl

3D stereo 360° panoptic [3012-42]

M. Dusariez

Ray space representation for 3D image processing [3012-43]

T. Fujii, T. Kimoto, M. Tanimoto

Spatial-light-modulator-based three-dimensional multiplanar display [3012-62]

M. Neil, E. Paige, L. Sucharov

Usefulness of observer-controlled camera angle in telepresence systems depends on the nature of the task: passive perceptual judgments compared to perceptual motor performance [3012-63]

J. Huber, I. Davies

Directional display [3012-65]

H. Lennerstad

Part B: The Engineering Reality of Virtual Reality 1997

CREATION AND EVALUATION OF VIRTUAL ENVIRONMENTS

MARTI: man-machine animation real-time interface [3012-44]

C. Jones, S. Dlay

Realistic image generation using model-driven processing in an interactive system [3012-45]

T. Miyagi, A. Hori, H. Sugama, Y. Murao, H. Enomoto

ROSE: the road simulation environment [3012-46]

P. Liatsis, P. Mitronikas

Body sway induced by 3D images [3012-47]

M. Hoshino, M. Takahashi, K. Oyamada, M. Ohmi, T. Yoshizawa

Evaluating an immersive virtual environment prototyping and simulation system [3012-48]

K. Nemire

IMMERSIVE DISPLAYS

Compact and wide-field-of-view head-mounted display [3012-49]

S. Uchiyama, H. Kamakura, J. Karasawa, M. Sakaguchi, T. Furihata, Y. Itoh

Virtual model displays [3012-50]

M. Bolas, S. Bryson, I. McDowall

New generation of 3D desktop computer interfaces [3012-51]

R. Skerjanc, S. Pastoor

Controlling graphic objects naturally: use your head [3012-52]

R. Browse, J. Rodger, I. Sewell, J. Brooke

[Let's move on the integration of motion rendering in VR \[3012-53\]](#)

U. Jakob, E. Douloumi

AUGMENTED REALITY/MEDICAL APPLICATIONS

[Video engraving for virtual environments \[3012-54\]](#)

G. Thomas, T. Blackmon, M. Sims, D. Rassmussen

[Augmented reality using range images \[3012-55\]](#)

C. Schutz, H. Huegli

[Haptic display for the VR arthroscopy training simulator \[3012-57\]](#)

R. Ziegler, C. Brandt, C. Kunstmann, W. Mueller, H. Werkhaeuser

[VERS: a virtual environment for reconstructive surgery planning \[3012-58\]](#)

K. Montgomery

VIEWPOINTS ON VR

[Failings and future of VR \[3012-60\]](#)

W. Cockayne, R. Darken

[Circulating images of virtual systems: trodes, gloves, and goggles in the eighties and nineties \[3012-61\]](#)

M. Ito, S. Fisher

Volume 3295: Stereoscopic Displays and Virtual Reality Systems V (1998)

Editors: Mark T. Bolas, Scott S. Fisher, John O. Merritt

Preface

Part A: Stereoscopic Displays and Applications

STEREOSCOPIC IMAGING WITH PERSONAL COMPUTERS

[Imager for Mars Pathfinder experiment \(IMP\): a multispectral stereo imaging system \[3295-38\]](#)

P. Smith

[Solving the interface problem for Windows stereo applications \[3295-1\]](#)

J. Halnon, D. Milici

[Software issues for PC-based stereoscopic displays: how to make PC users see stereo \[3295-3\]](#)

D. Sawdai, G. Hamlin, D. Swift

[Development of stereoscopic software tools for Windows 95 and Windows NT computer applications \[3295-4\]](#)

D. Qualman

STEREOSCOPIC IMAGE SYNTHESIS

[Stereo pairs from linear morphing \[3295-5\]](#)

D. McAllister

[Robust quadtree-based disparity estimation for the reconstruction of intermediate stereoscopic images \[3295-6\]](#)

A. Mancini, J. Konrad

[Stereoscopic conversion of monoscopic video by the transformation of vertical-to-horizontal disparity \[3295-7\]](#)

M. Kim, M. Song, D. Kim, K. Choi

[Synthesis of a high-resolution 3D stereoscopic image pair from a high-resolution monoscopic image and a low-resolution depth map \[3295-8\]](#)

K. Kim, M. Siegel, J. Son

Synthesizing new views from a pair of stereo images [3295-9]

T. Chao, H. Hang, S. Wang

THEORETICAL ISSUES IN STEREOSCOPIC DISPLAYS

Resampling radially captured images for perspectively correct stereoscopic display [3295-10]

N. Dodgson

Orthostereoscopic conditions for 3D HDTV [3295-12]

H. Yamanoue, M. Nagayama, M. Bitou, J. Tanada

Improved Byatt modulator [3295-13]

L. Lipton, J. Halnon, B. Dorworth, J. Woupio

Simple method for automatic vergence control of the parallel stereo camera [3295-14]

S. Park, Y. Choi, N. Lee, J. Cho, Y. Lee

Compensation of 3D image perspective distortion using a sliding-aperture multistereoscopic technique [3295-15]

S. Shestak, J. Son, J. Kim

STEREOSCOPIC DISPLAY APPLICATIONS AND NEW DEVELOPMENTS

Virtual museum of Japanese Buddhist temple features for intercultural communication [3295-16]

T. Kawai, H. Takao, T. Inoue, H. Miyamoto, K. Noro

Information visualization and retrieval using stereoscopic display of document and term relations [3295-17]

R. Fowler, W. Lawrence Fowler

Practical remote control system using work point tracking method [3295-18]

M. Usui, T. Mitsui, K. Fujii, N. Ono, Y. Niwa

New stereoscopic video camera and monitor system with central high resolution [3295-19]

K. Matsunaga, Y. Nose, M. Minamoto, K. Shidoji, K. Ebuchi, D. Itoh, T. Inoue, T. Hayami, Y. Matsuki, Y. Arikawa, K. Matsubara

Development of a stereoscopic haptic acoustic real-time computer (SHARC) [3295-20]

T. Chen, P. Young, D. Anderson, J. Yu, S. Nagata

AUTOSTEREOSCOPIC DISPLAYS

Lightweight compact 2D/3D autostereoscopic LCD backlight for games, monitor, and notebook applications [3295-22]

J. Eichenlaub

Wide-viewing-area glassless stereoscopic display using multiple projectors [3295-25]

A. Arimoto, T. Ooshima, T. Tani, Y. Kaneko

Rear-cross-lenticular 3D display without eyeglasses [3295-27]

H. Morishima, H. Nose, N. Taniguchi, K. Inoguchi, S. Matsumura

Dresden 3D display (D4D) [3295-28]

A. Schwerdtner, H. Heidrich

Improved rendering of parallax panoramagrams for a time-multiplexed autostereoscopic display [3295-30]

A. Kalai, M. Siegel

Multiview 3D imaging system with full-color capabilities [3295-31]

J. Son, V. Komar, Y. Chun, S. Sabo, V. Mayorov, L. Balasny, S. Belyaev, M. Semin, M. Krutik, H. Jeon

HUMAN FACTOR ISSUES IN 3D DISPLAYS

[Psychovisual aspects of viewing stereoscopic video sequences \[3295-32\]](#)

W. Tam, L. Stelmach, P. Corriveau

[Depth reversals in stereoscopic displays driven by apparent size \[3295-33\]](#)

G. Sacher, A. Hayes, I. Thornton, M. Sereno, A. Malony

[Stereo depth and the control of locomotive heading \[3295-34\]](#)

S. Rushton, J. Harris

STEREOSCOPIIC IMAGE CODING

[Ray-space coding based on arbitrarily shaped DCT \[3295-35\]](#)

T. Fujii, T. Kimoto, M. Tanimoto

[Depth-controlled 3D TV image coding \[3295-36\]](#)

A. Chiari, B. Ciciani, M. Romero, R. Rossi

[Development of a digital 3D broadcasting system using progressively scanned digital broadcasting \[3295-37\]](#)

Y. Soga, H. Kikuchi, S. Miyabayashi, Y. Yamamoto, M. Matsudaira, M. Yuasa

DEMONSTRATIONS AND AUTHOR INTERVIEWS

[Image-side perspective and stereoscopy \[3295-11\]](#)

J. Bercovitz

Part B: The Engineering Reality of Virtual Reality

ENVIRONMENTS AND WORLDS

[Development of a chaotic environment engine for dynamic virtual world heritage environments \[3295-39\]](#)

S. Thrane Refsland, T. Ojika, R. Stone

[Legoworld: a multisensory environment for virtual prototyping \[3295-40\]](#)

P. Young, T. Chen, D. Anderson, J. Yu, S. Nagata

[Creating virtual environments over the Internet \[3295-41\]](#)

T. Chen, S. Ricardo, P. Young, D. Anderson, J. Yu, S. Nagata

HUMAN INTERFACE

[Incorporating the viewer's point of regard \(POR\) in gaze-contingent virtual environments \[3295-42\]](#)

A. Duchowski

[Head tracking for the control of virtual viewpoint direction \[3295-43\]](#)

R. Browse, J. Rodger, I. Ahmad

[Human-scale interaction for virtual model displays: a clear case for real tools \[3295-44\]](#)

G. Williams, I. McDowall, M. Bolas

SYSTEMS AND TECHNIQUES

[Interactive realization system of visual reality using hierarchical model-driven concurrent processing \[3295-45\]](#)

H. Enomoto, Y. Murao

[DWTP: a basis for networked VR on the Internet \[3295-46\]](#)

W. Broll, D. Schick

[Panorama video server system \[3295-47\]](#)

T. Okimura, K. Kimura, K. Nakazawa, H. Nakajima

Combining 3D structure of real video and synthetic objects [3295-48]

M. Kim, M. Song, D. Kim

Low-cost real-time 3D PC distributed-interactive-simulation (DIS) application for C4I [3295-49]

D. Gonthier, H. Veron

APPLICATIONS

Engineering virtual-environment-based training simulators [3295-50]

H. Jense, F. Kuijper

Augmented reality using GPS [3295-51]

J. Kim, H. Kim, B. Jang, J. Kim, D. Kim

Virtual Explorer: creating interactive 3D virtual environments for education [3295-54]

K. Dean, X. Asay-Davis, E. Finn, J. Friesner, B. Naylor, S. Wustner, S. Fisher, K. Wilson

Individual combatant simulator for tactics training and mission rehearsal [3295-55]

K. Nemire

Volume 3639: Stereoscopic Displays and Virtual Reality Systems VI (1999)

Editors: John O. Merritt, Mark T. Bolas, Scott S. Fisher

Preface

Part A: Stereoscopic Displays and Applications

HUMAN FACTORS IN STEREOSCOPIC DISPLAYS

Stereo image quality: effects of spatio-temporal resolution [3639-1]

L. Stelmach, W. Tam, D. Meegan

Is monocular degradation visible in fused stereo images? [3639-2]

D. Meegan, L. Stelmach, W. Tam

Kinder, gentler stereo [3639-3]

M. Siegel, Y. Tobinaga, T. Akiya

Evaluation of stereoscopic display with visual function and interview [3639-4]

F. Okuyama

Development of an autostereoscopic monitor and 2D-to-3D conversion for medical and surgical uses: requirements, clinical trials, and degree of acceptance [3639-5]

M. Levinson, G. Hamagishi, H. Murata

Evaluation of stereoscopic video cameras synchronized with the movement of an operator's head on the teleoperation of the actual backhoe shovel [3639-6]

M. Minamoto, K. Matsunaga

Comparison of operation efficiency for the insert task when using stereoscopic images with additional lines, stereoscopic images, and a manipulator with force feedback [3639-7]

K. Matsunaga, K. Shidoji, K. Matsubara

Analysis of eyepoint locations and accuracy of rendered depth in binocular head-mounted displays [3639-8]

L. Vaissie, J. Rolland, G. Bochenek

AUTOSTEREOSCOPIC DISPLAYS

[Advanced autostereoscopic display for G-7 pilot project \[3639-9\]](#)

T. Hattori, T. Ishigaki, K. Shimamoto, A. Sawaki, T. Ishiguchi, H. Kobayashi

[Micropolarizer-based multiple-viewer autostereoscopic display \[3639-10\]](#)

S. Benton, T. Slowe, A. Kropp, S. Smith

[Image preparation for 3D LCD \[3639-11\]](#)

C. van Berkel

[Viewing-point detection system using specific image processing for eye-position tracking autostereoscopic display \[3639-12\]](#)

H. Imai, S. Tsujikawa, M. Imai

[Design and perception testing of a novel 3D autostereoscopic holographic display system \[3639-13\]](#)

G. Bochenek, T. Meitzler, P. Muench, K. Lane

[Multiperspective look-around autostereoscopic projection display using an ICFLCD \[3639-14\]](#)

J. Eichenlaub

[Stereoscopic display using a 1.2-m diameter stretchable membrane mirror \[3639-15\]](#)

S. McKay, S. Mason, L. Mair, P. Waddell, S. Fraser

[Non-glasses-type stereoscopic display system based on polarization \[3639-16\]](#)

J. Son, V. Smirnov, Y. Chun, S. Kim

[Real-time 3D display with acousto-optical deflectors \[3639-17\]](#)

J. Son, V. Smirnov, L. Asnis, V. Volkonski, J. Chun, S. Kuznetzov, H. Lee

NEW DEVELOPMENTS

[Digital stereoscopic imaging \[3639-18\]](#)

A. Rao, A. Jaimes

[Stereoscopic viewer using a volume holographic memory \[3639-19\]](#)

S. Lee, E. Kim

[Morphing in stereo animation \[3639-40\]](#)

J. Davis, D. McAllister

DEPTH AND DISPARITY PROCESSING

[New stereo matching algorithm \[3639-20\]](#)

Y. Ahmed, H. Afifi, G. Rubino

[Enhancement of viewer comfort in stereoscopic viewing: parallax adjustment \[3639-21\]](#)

J. Konrad

[Disparity estimation hardware for real-time stereoscopic applications \[3639-22\]](#)

G. Karastergios, D. Kalivas, G. Papadopoulos, A. Birbas, E. Vasilakopoulou

[Stereo display of nested 3D volume data using automatic tunnelling \[3639-23\]](#)

R. Hubbard, D. Hancock

[Error-tolerant interpolation of intermediate views for real-time applications \[3639-24\]](#)

M. Lueck, H. Schroeder

[Multipass stereo matching algorithm using high-curvature points on image profiles \[3639-25\]](#)

Y. Peng, S. Wang

SPECIAL SESSION: DIGITAL STEREOSCOPIC AND 3D VIDEO--COMMUNICATION AND ENTERTAINMENT FOR THE FUTURE

Stereoscopic and 3D visual communications for the future [3639-26]

R. Buschmann

Stereo/multiview video encoding using the MPEG family of standards [3639-27]

J. Ohm

Architecture for digital 3D broadcasting [3639-28]

P. Harman

Perceptual basis of stereoscopic video [3639-29]

L. Stelmach, W. Tam, D. Meegan

Real-time synthesis of digital multiple-viewpoint stereoscopic images [3639-30]

E. Hendriks, A. Redert

Digital signal processing for the analysis and coding of stereoscopic and 3D video [3639-31]

M. Stryntz, S. Malassiotis, I. Kompatsiaris

COMPUTER-BASED STEREOSCOPIC IMAGING

Converting existing applications to support high-quality stereoscopy [3639-32]

R. Akka

Interfacing shuttering-type stereoscopic hardware with Windows/NT workstations [3639-33]

L. Lipton, J. Halnon

PC-based stereoscopic video walkthrough [3639-34]

A. Woods, D. Offszanka, G. Martin

STEREOSCOPIC ACQUISITION SYSTEMS

New acquisition system of arbitrary ray space [3639-35]

T. Fujii, T. Kimoto, M. Tanimoto

New stereoscopic system [3639-37]

Y. Ahmed, H. Afifi

Part B: The Engineering Reality of Virtual Reality

SOFTWARE TECHNIQUES AND ARCHITECTURES

Dialogic generation system of realistic multimedia contents corresponding to dynamic intentions [3639-41]

M. Masuda, Y. Murao, H. Enomoto

Transparently supporting a wide range of VR and stereoscopic display devices [3639-42]

D. Pape, D. Sandin, T. DeFanti

INTERFACES

Haptic Workbench: a multisensory virtual environment [3639-44]

D. Stevenson, K. Smith, J. McLaughlin, C. Gunn, J. Veldkamp, M. Dixon

Head tracking for viewpoint control in stereographic displays [3639-45]

R. Browse, J. Rodger, S. Pakowski, J. Davis

Physical presence: palettes in virtual spaces [3639-46]

G. Williams, H. Faste, I. McDowall, M. Bolas

SYSTEMS AND APPLICATIONS

[Tracking systems and the value of inertial technology \[3639-47\]](#)

F. Kuijper, A. Smits, H. Jense

[Virtual environment for training in microsurgery \[3639-48\]](#)

K. Montgomery, M. Stephanides, J. Brown, J. Latombe, S. Schendel

[Virtual world for helping teens practice assertiveness skills \[3639-49\]](#)

K. Nemire, J. Beil, R. Swan

[Development of a virtual laboratory for the study of complex human behavior \[3639-50\]](#)

J. Pelz, M. Hayhoe, D. Ballard, A. Shrivastava, J. Bayliss, M. von der Heyde

DISPLAYS

[Properties and applications of spherical panoramic virtual displays \[3639-52\]](#)

G. Kintz

[LOOKAROUND: a spherical VR environment \[3639-53\]](#)

S. Chen

[Composing virtual environment using images of digital camera \[3639-54\]](#)

H. Guan, S. Aoki, K. Ejiri

[Thin wide-field-of-view HMD with free-form-surface prism and applications \[3639-55\]](#)

S. Yamazaki, K. Inoguchi, Y. Saito, H. Morishima, N. Taniguchi

[Dynamic focusing in head-mounted displays \[3639-56\]](#)

J. Rolland, M. Krueger, A. Goon

Volume 3957: Stereoscopic Displays and Virtual Reality Systems VII (2000)

Editors: John O. Merritt, Stephen A. Benton, Andrew J. Woods, Mark T. Bolas

Preface

Part A: Stereoscopic Displays and Applications

STEREOSCOPIC VISION AND HUMAN FACTORS

[Is eye damage caused by stereoscopic displays? \[3957-1\]](#)

U. Mayer, M. Neumann, W. Kubbat, K. Landau

[Effects of stereoscopic filming parameters and display duration on the subjective assessment of eye strain \[3957-3\]](#)

W. IJsselsteijn, H. de Ridder, J. Vliegen

[Video-based augmented-reality stereoscopic system: an application to traffic scenes \[3957-5\]](#)

J. Arboleda Aguinaga, A. Martinez, E. Martin, C. Torrens, J. Figueras

[Bandwidth reduction for stereoscopic video signals \[3957-6\]](#)

W. Tam, L. Stelmach, D. Meegan, A. Vincent

[Effect of eye position on the projected stimulus distance in a binocular head-mounted display \[3957-7\]](#)

J. McCandless, S. Ellis

MEDICAL APPLICATIONS

[Stereo fundus photography: automatic evaluation of retinal topography \[3957-8\]](#)

A. Berestov

[Three-dimensional display system for medical imaging with computer-generated integral photography \[3957-9\]](#)

S. Nakajima, K. Masamune, I. Sakuma, T. Dohi

Intraoperative presentation of surgical planning and simulation results using a stereoscopic see-through head-mounted display [3957-10]

T. Salb, J. Brief, O. Burgert, S. Hassfeld, R. Dillmann

DIGITAL STEREOSCOPIIC IMAGING

Stereoscopic correspondence by applying physical constraints and statistical observations to dissimilarity map [3957-12]

T. Chao, S. Wang, H. Hang

Dense-disparity estimation from feature correspondences [3957-13]

J. Konrad, Z. Lan

Disparity-based view interpolation for multiple-perspective stereoscopic displays [3957-14]

H. Huang, C. Kao, Y. Lin, Y. Hung

Open-GL-based stereo system for 3D measurements [3957-15]

F. Boochs, A. Gehrhoff, M. Neifer

STANDARDS IN STEREOSCOPIIC IMAGING

Display characteristics and the impact on usability for stereo [3957-16]

J. Roberts, O. Slattery

AUTOSTEREOSCOPIIC DISPLAYS I

Fabricating polymeric microretardation arrays for autostereoscopic display system by CO₂-laser heat processing technology [3957-41]

C. Tsai, K. Lee, K. Huang, C. Lee

Flat-panel autostereoscopic displays: characterization and enhancement [3957-18]

G. Woodgate, J. Harrold, A. Jacobs, R. Moseley, D. Ezra

Image-tiling system using optically addressed spatial light modulator for high-resolution and multiview 3D display [3957-19]

H. Jeon, A. Travis, N. Collings, T. Wilkinson, Y. Frauel

50" time-multiplexed autostereoscopic display [3957-20]

N. Dodgson, J. Moore, S. Lang, G. Martin, P. Canepa

16-view TV system based on spatial joining of viewing zones [3957-21]

J. Son, V. Smirnov, K. Kim, Y. Chun, S. Kim

AUTOSTEREOSCOPIIC DISPLAYS II

Eye-position detection system [3957-23]

H. Heidrich, A. Schwerdtner, A. Glatte, H. Mix

Membrane-mirror-based autostereoscopic display for tele-operation and telepresence applications [3957-24]

S. McKay, G. Mair, S. Mason, K. Revie

Multiviewpoint autostereoscopic display system based on volume hologram [3957-25]

S. Lee, H. Yang, S. Yi, K. Son, E. Kim

3D display using intersection of light beams [3957-26]

T. Sudo, H. Morishima, T. Osaka, N. Taniguchi

Cylindrical 3D video display observable from all directions [3957-27]

T. Endo, Y. Kajiki, T. Honda, M. Sato

STEREOSCOPIC TELEOPERATION

Effect of the ratio difference of overlapped areas of stereoscopic images on each eye in a teleoperation [3957-29]

K. Matsunaga, T. Yamamoto, K. Shidoji, Y. Matsuki

Judging size, distance, and depth with an active telepresence system [3957-30]

A. Plooy, J. Brooker, J. Wann, P. Sharkey

Can observers exploit enhanced-disparity information to control reaching movements within telepresence environments? [3957-31]

M. Bradshaw, P. Hibbard, R. van der Willigen, S. Watt, I. Davies, N. Stringer, N. Beagley, A. Willis

NEW DEVELOPMENTS IN STEREOSCOPIC IMAGING

Eliminating pi-cell artifacts [3957-32]

L. Lipton, J. Halnon, J. Wuopio, B. Dorworth

Multiresolution stereoscopic immersive communication using a set of four cameras [3957-33]

T. Naemura, K. Sugita, T. Takano, H. Harashima

STEREOSCOPIC DISPLAY APPLICATIONS

Production of stereoscopic 3D movies of a Spanish monastery for a digital archive [3957-34]

T. Kawai, T. Shibata, T. Mochizuki, K. Noro

Developments in StereoJet technology [3957-35]

J. Scarpetti, P. DuBois, R. Friedhoff, V. Walworth

Autostereoscopic teleconferencing system [3957-36]

P. Harman

Multimedia ambience communication based on actual moving pictures in a stereoscopic projection display environment [3957-38]

K. Yamada, T. Ichikawa, T. Naemura, K. Aizawa, S. Morishima, T. Saito

Stereo parallax and disparity in single-lens stereoscopy [3957-39]

M. Weissman

POSTER SESSION

Fabrication of a large F-number lenticular plate and its use as a small-angle flat-top diffuser in autostereoscopic display screens [3957-17]

C. Tsai, P. Lai, K. Lee, C. Lee

Using enhanced disparity information under telepresence [3957-43]

N. Stringer, M. Bradshaw, I. Davies, N. Beagley, A. Willis

Part B: The Engineering Reality of Virtual Reality

TELEPRESENCE

Real-time interactive remote image acquisition utilizing the scope cache [3957-44]

T. Gunji, T. Yonekura

Teleconferencing system using virtual camera [3957-45]

D. Shibuichi, T. Tanaka, N. Terashima, H. Tominaga

Supporting natural prehension in virtual environments [3957-46]

A. Plooy, J. Wann

SYSTEMS

Building a VR narrative [3957-47]

J. Anstey, D. Pape, D. Sandin

RAGE visualization for Special Forces operations [3957-48]

M. Lanzagorta, E. Kuo

Pixels are good [3957-49]

M. Bolas, I. McDowall, G. Williams, D. Corr, J. Berta

SOFTWARE

Virtual reality technique to assist measurement of degree of shaking of two minarets of an ancient building [3957-50]

A. Homainejad, M. Satari

Adaptive streaming protocol for mobile-augmented-reality-based concurrent engineering [3957-51]

T. Pyssysalo

Toward immersive clay modeling: interactive modeling with octrees [3957-52]

E. Moritz, F. Kuester, B. Hamann, K. Joy, H. Hagen

Software components for haptic constraints [3957-53]

M. Hutchins

VR scientific visualization in an immersive room [3957-54]

M. Lanzagorta, R. Rosenberg, E. Kuo

INTERACTION

Applying hpto-visual virtual environment systems to industrial applications [3957-55]

D. Stevenson, F. Bogsanyi

Scale and collocation in hpto-visual environments [3957-56]

F. Bogsanyi, A. Krumm-Heller

Designers workbench: toward real-time immersive modeling [3957-57]

F. Kuester, M. Duchaineau, B. Hamann, K. Joy, K. Ma

Unencumbered interaction in display environments with extended working volume [3957-58]

U. Hafner, A. Simon, M. Doulis

Survey of projection-based immersive displays [3957-61]

D. Wright

Volume 4297: Stereoscopic Displays and Virtual Reality Systems VIII (2001)

Editors: Andrew J. Woods, Mark T. Bolas, John O. Merritt, Stephen A. Benton

Preface

Part A: Stereoscopic Displays and Applications

STEREOSCOPIC PROJECTION

Eclipse projection [4297-1]

L. Lipton, B. Dorwoth

Optimal usage of LCD projectors for polarized stereoscopic projection [4297-2]

A. Woods

Efficiency of polarization optics in viewing stereoscopic images [4297-3]

V. Walworth, L. Cincotta, J. Scarpetti

HUMAN FACTORS IN STEREOSCOPIC IMAGING

Effect of overlap rate between stereoscopic images on performance in a teleoperation [4297-4]

K. Shidoji, K. Matsunaga, R. Watanabe, T. Yamamoto, K. Goshi, Y. Matsuki

Investigation of potential benefits of stereoscopic video for visual detection in turbid underwater environments [4297-5]

S. Ma, P. Milgram

Perceptions of crosstalk and the possibility of a zoneless autostereoscopic display [4297-6]

M. Siegel

Controlling perceived depth in stereoscopic images [4297-7]

G. Jones, D. Lee, N. Holliman, D. Ezra

Sampling artifacts in perspective and stereo displays [4297-8]

J. Pfautz

STEREOSCOPIC CAMERA SYSTEMS

Computer-controlled stereoscopic camera base used to assess visual depth judgment under orthostereoscopic and nonorthostereoscopic conditions [4297-9]

C. Ikehara

Stereo at the speed of light: high-speed digital stereo imaging at up to 100 million frames per second [4297-10]

D. Snyder, E. Chenette, J. Hudson, R. Young, D. Gardner, P. Nebolsine

Relationship between operational efficiency and field-refreshing rates of stereoscopic image-pairs in teleoperational work [4297-11]

T. Ienaga, K. Matsunaga, K. Shidoji, K. Goshi, Y. Matsuki, H. Nagata

Spherical stereoscopic sensor for 3D color imaging [4297-12]

T. Ea, O. Romain, C. Gastaud, P. Garda

Stereo mosaicing from a single moving video camera [4297-13]

S. Peleg, M. Ben-Ezra, Y. Pritch

COMPUTER-BASED STEREOSCOPIC IMAGING AND APPLICATIONS

Method of displaying stereoscopic images under Windows 9x and Windows NT using DirectX [4297-14]

D. Qualman

Electronic stereoscopic presentations: what tools are available and what tools are needed [4297-60]

A. Woods

Stereoscopic head-up display for aviation [4297-16]

J. Kaiser, U. Mayer, A. Helmetag

Device for diagnosis and treatment of impairments on binocular vision and stereopsis [4297-17]

J. Bahn, Y. Choi, J. Son, N. Kodratiev, V. Elkhov, Y. Ovechkis, C. Chung

Three-dimensional image capturing and representation for multimedia ambiance communication [4297-18]

T. Ichikawa, S. Iwasawa, K. Yamada, T. Kanamaru, T. Naemura, K. Aizawa, S. Morishima, T. Saito

AUTOSTEREOSCOPIC DISPLAYS I

3D display system for one observer using multiprojection of two-dimensional images from an arc [4297-19]

S. Kim, Y. Kajiki, T. Honda

Performance of a flat-panel display system convertible between 2D and autostereoscopic 3D modes [4297-20]

D. Montgomery, G. Woodgate, A. Jacobs, J. Harrold, D. Ezra

Desktop autostereoscopic display with head tracking capability [4297-21]

J. Son, S. Shestak, S. Kim, Y. Choi

Flat-panel autostereoscopic display [4297-22]

C. Tsai, K. Lee, W. Hsueh, C. Lee

Super multiview 3D display system using reflective vibrating scanner array [4297-23]

H. Jeon, N. Jung, J. Choi, Y. Jung, Y. Huh, J. Kim

Three-dimensional display system based on computer-generated integral photography [4297-24]

S. Min, S. Jung, J. Park, B. Lee

Recent advances in the NYU autostereoscopic display [4297-59]

K. Perlin, C. Poultney, J. Kollin, D. Kristjansson, S. Paxia

AUTOSTEREOSCOPIC DISPLAYS II

Varrier autostereographic display [4297-25]

D. Sandin, T. Margolis, G. Dawe, J. Leigh, T. DeFanti

Real-time view interpolation system for super multiview 3D display [4297-26]

T. Hamaguchi, T. Fujii, Y. Kajiki, T. Honda

Optical design and analysis for super multiview three-dimensional imaging system [4297-27]

S. Kim, K. Sohn, V. Savaljev, E. Pen, J. Son, J. Chun

Volumetric three-dimensional display system with rasterization hardware [4297-28]

G. Favalora, R. Dorval, D. Hall, M. Giovinco, J. Napoli

Solid state volumetric display projecting 3D objects in space [4297-29]

E. van Nuland

RECOMMENDATION AND STANDARDS FOR STEREOSCOPIC IMAGING

Human factors involved in perception and action in a natural stereoscopic world: an up-to-date review with guidelines for stereoscopic displays and stereoscopic virtual reality (VR) [4297-30]

L. Perez-Bayas

Human considerations in stereoscopic displays [4297-31]

J. Rupkalvis

Effects of display geometry and pixel structure on stereo display usability [4297-32]

E. Mulkens, J. Roberts

STEREOSCOPIC IMAGE PROCESSING AND COMPRESSION

3D MPEG-2 video transmission over broadband network and broadcast channels [4297-33]

G. Gagnon, S. Subramaniam, A. Vincent

Stereoscopic video: asymmetrical coding with temporal interleaving [4297-34]

W. Tam, L. Stelmach, S. Subramaniam

Issues in multiview autostereoscopic image compression [4297-35]

D. Shah, N. Dodgson

Geometric image processing of stereo pairs [4297-36]

D. McAllister, C. DesJardins

Three dimensions via the Internet [4297-37]

A. Millin, P. Harman

POSTER SESSION

Perceived size of targets displayed stereoscopically [4297-39]

W. Tam, K. Shimono, S. Yano

Can telepresent observers learn to take account of enhanced binocular disparities? [4297-40]

A. Willis, M. Bradshaw, P. Hibbard, N. Stringer, I. Davies, S. Watt

Performance enhancement of field-sequential stereoscopic video systems [4297-41]

W. Tam, D. Wang, R. Renaud, A. Vincent

IllusionHole: a stereoscopic display for multiple observers [4297-42]

Y. Kitamura, T. Konishi, T. Masaki, F. Kishino

Part B: The Engineering Reality of Virtual Reality

INTERESTING TOPICS

Approach to HIR (human-oriented information restructuring) using bird's-eye views [4297-43]

K. Toyota, M. Sekitoh, T. Fujii, T. Kimoto, M. Tanimoto

Three-dimensional parameters tracking in multiview video sequences [4297-44]

Y. Perret, T. Excoffier, S. Bouakaz

Service connectivity architecture for mobile augmented reality [4297-45]

T. Turunen, T. Pyssysalo, J. Roening

EVALUATION AND SYNTHESIS

View synthesis using parallax invariance [4297-46]

F. Dornaika

Operator performance evaluation of controlled depth of field in a stereographically displayed virtual environment [4297-47]

J. Brooker, P. Sharkey

Single and multiple viewer stereo with DLP projectors [4297-61]

I. McDowall, M. Bolas, D. Corr, T. Schmidt

APPLICATIONS

Guided exploration in virtual environments [4297-49]

S. Beckhaus, G. Eckel, T. Strothotte

VirtualExplorer: a plugin-based virtual reality framework [4297-50]

F. Kuester, B. Hamann, K. Joy

3D visualization of building services in virtual environment [4297-51]

M. Groehn, M. Laakso, M. Mantere, T. Takala

"Talking head" system using object-oriented display [4297-52]

M. Inami, N. Kawakami, Y. Yanagida, D. Sekiguchi, Y. Zaitso, T. Maeda, S. Tachi

INTEGRATION AND IMPLEMENTATION

Some problems encountered in the development of a virtual reality system for evaluating human performance during emergency power-off aircraft landings [4297-53]

D. McAllister, B. Morris, K. Matson, R. Hogan, D. Mershon, C. Mayer, R. Lim, M. Holmes, J. Tomlinson

How to build a virtual room [4297-54]

J. Jalkanen, H. Napari

Implementation issues of 3D audio in a virtual room [4297-55]

J. Hiipakka, T. Ilmonen, T. Lokki, M. Groehn, L. Savioja

Integration of eye tracking capability into optical see-through head-mounted displays [4297-56]

H. Hua

Volume 4660: Stereoscopic Displays and Virtual Reality Systems IX (2002)

Editors: Andrew J. Woods, John O. Merritt, Stephen A. Benton, Mark T. Bolas

Preface

Part A: Stereoscopic Displays and Applications

HUMAN FACTORS IN STEREOSCOPIC IMAGING

[Effect of overlap rate between a stereoscopic image pair on work performance in VR environment \[4660-1\]](#)

K. Shidoji, K. Matsunaga, K. Goshi, Y. Matsuki, T. Yamamoto

[Proposal of a new method for depth accuracy in a virtual world \[4660-3\]](#)

S. Kawahara, T. Sugihara, T. Miyasato, T. Yonekura

[Viewing stereoscopic images comfortably: the effects of whole-field vertical disparity \[4660-4\]](#)

F. Speranza, L. Wilcox

STEREOSCOPIC VIDEO

[Stereoscopic camera design \[4660-5\]](#)

D. Montgomery, C. Jones, J. Stewart, A. Smith

[Parallax distribution for ease of viewing in stereoscopic HDTV \[4660-6\]](#)

S. Ide, H. Yamanoue, M. Okui, F. Okano, M. Bitou, N. Terashima

[Stereoscopic DVD creation \[4660-7\]](#)

D. Dupont, J. Rupkalvis

[Development of software for editing of stereoscopic 3-D movies \[4660-8\]](#)

T. Kawai, T. Shibata, T. Inoue, Y. Sakaguchi, K. Okabe, Y. Kuno

[Characterizing sources of ghosting in time-sequential stereoscopic video displays \[4660-9\]](#)

A. Woods, S. Tan

DIGITAL STEREOSCOPIC IMAGING

[Rapid 2D-to-3D conversion \[4660-10\]](#)

P. Harman, J. Flack, S. Fox, M. Dowley

[Adaptive disparity estimation and intermediate view reconstruction for multiview 3D imaging system \[4660-11\]](#)

K. Bae, S. Lim, E. Kim

[Cross-switching in asymmetrical coding for stereoscopic video \[4660-12\]](#)

W. Tam, L. Stelmach, F. Speranza, R. Renaud

[Real-time view interpolation system for a super multiview 3D display: processing implementation and evaluation \[4660-14\]](#)

T. Hamaguchi, T. Fujii, T. Honda

INTEGRAL 3D IMAGING

[Full parallax image generation \[4660-15\]](#)

J. Son, V. Saveljev, Y. Choi, J. Bahn

[Pixels grouping and shadow cache for faster integral 3D ray tracing \[4660-16\]](#)

O. Youssef, A. Aggoun, W. Wolf, M. McCormick

[Depth extraction from unidirectional integral image using a modified multibaseline technique \[4660-17\]](#)

C. Wu, A. Aggoun, M. McCormick, S. Kung

[Viewing-angle-enhanced integral imaging using lens switching \[4660-18\]](#)

B. Lee, S. Jung, J. Park, S. Min

Objective quality measurement of integral 3D images [4660-19]

M. Forman, N. Davies, M. McCormick

VOLUMETRIC 3D IMAGING

Volumetric three-dimensional display using projection CRT [4660-20]

J. Lee, H. Jang, H. Nam, M. Song, B. Kim, Y. Oh

Live 3-D video in volumetric display [4660-21]

J. Son, S. Shestak, V. Huschyn, V. Ulizko, D. Kang

FELIX 3D display: an interactive tool for volumetric imaging [4660-22]

K. Langhans, D. Bahr, D. Bezecny, D. Homann, K. Oltmann, K. Oltmann, C. Guill, E. Rieper, G. Ardey

AUTOSTEREOSCOPIC DISPLAYS I

Development of 3D display system by a fanlike array of projection optics [4660-23]

T. Honda, D. Nagai, M. Shimomatsu

Eye tracking for autostereoscopic displays using web cams [4660-45]

M. Andiel, S. Hentschke, T. Elle, E. Fuchs

Stereodisplay with neural network image processing [4660-25]

A. Loukianitsa, A. Putilin

AUTOSTEREOSCOPIC DISPLAYS II

Multiviewpoint autostereoscopic displays from 4D-Vision GmbH [4660-26]

A. Schmidt, A. Grasnick

Design and fabrication of a micromirror array for autostereoscopic 3D displays [4660-27]

J. Yan, S. Kowel, H. Cho, C. Ahn

New autostereoscopic display technology: the SynthaGram [4660-28]

L. Lipton, M. Feldman

Reduction of the thickness of lenticular stereoscopic display using full-color LED panel [4660-29]

H. Yamamoto, S. Muguruma, Y. Hayasaki, Y. Nagai, Y. Shimizu, N. Nishida

Autostereoscopic field-sequential display with full freedom of movement or Let the display wear the shutter glasses! [4660-30]

Y. Mantinband, H. Goldberg, I. Kleinberger, P. Kleinberger

AUTOSTEREOSCOPIC DISPLAYS III

Analysis of the viewing zone of multiview autostereoscopic displays [4660-31]

N. Dodgson

Autostereoscopic display with eye tracking [4660-32]

T. Tomono, K. Hoon, Y. Ha, S. Kim, J. Son

Development of a color 3D display visible to plural viewers at the same time without special glasses by using a ray-regenerating method [4660-33]

G. Hamagishi, T. Ando, M. Higashino, A. Yamashita, K. Mashitani, M. Inoue, S. Kishimoto, T. Kobayashi

Improved quality three-dimensional integral imaging and projection using nonstationary optical components [4660-65]

J. Jang, B. Javidi

STEREOSCOPIC DISPLAY APPLICATIONS

Real-time image-based rendering for stereo views of vegetation [4660-64]

J. Borse, D. McAllister

Virtual view generation of natural panorama scenes by setting representation [4660-35]

K. Yamada, K. Mochizuki, T. Naemura, K. Aizawa, T. Saito

Visualization in aerospace research with a large wall display system [4660-36]

Y. Matsuo

STEREOSCOPIIC CAMERA SYSTEMS

Multiple-view stereoscopic line-scan imaging [4660-37]

J. Evans, H. Hon

Development of an electro-optical 3D adapter for stereoscopic video recording [4660-39]

T. Shibata, T. Kawai, T. Inoue, Y. Sakaguchi, K. Okabe, Y. Kuno

POSTER POP SESSION

Do observers exploit binocular disparity information in motor tasks within dynamic telepresence environments? [4660-41]

M. Bradshaw, K. Elliott, S. Watt, I. Davies, A. Willis

Ronchi retarder gratings as polarization modulators [4660-42]

M. Ortiz-Gutierrez, A. Olivares-Perez, M. Perez-Cortes, J. Juarez-Perez, B. Pinto-Iguanero, M. Gomez-Colin, J. Ibarra-Torres

Autostereoscopic display with real-image virtual screen and light filters [4660-43]

H. Kakeya, Y. Arakawa

Adaptive hierarchical stereo matching using object segmentation and window warping [4660-44]

H. Lee, J. Kim, Y. Kim, Y. Ha

3D display system using monocular multiview displays [4660-46]

K. Sakamoto, K. Saruta, K. Takeda

Part B: The Engineering Reality of Virtual Reality

METRICS

Micro-archiving and interactive virtual insect exhibit [4660-66]

S. Fisher, T. Saito, I. McDowall, Y. Nakayama, M. Bolas, K. Kohiyama

Shape and motion measurement of time-varying objects based on spatio-temporal image analysis for multimedia applications [4660-48]

M. Pawlowski, M. Kujawinska

Interactive stereo electron microscopy enhanced with virtual reality [4660-49]

E. Bethel, S. Bastacky, K. Schwartz

SENSES

Virtual haptic exploratory visualization of line graphs and charts [4660-50]

J. Roberts, K. Franklin, J. Cullinane

Is audio useful in immersive visualization? [4660-51]

M. Grohn

Small-scale tactile graphics for virtual reality systems [4660-52]

J. Roberts, O. Slattery, B. Swope, V. Min, T. Comstock

PERFORMANCE

Combining a multithreaded scene graph system with a tiled display environment [4660-53]

E. Bethel, R. Frank, J. Brederson

Object-oriented framework for rapid game prototyping [4660-55]

A. Passos, R. Simpson

Usability engineering: domain analysis activities for augmented-reality systems [4660-67]

J. Gabbard, J. Swan, D. Hix, M. Lanzagorta, M. Livingston, D. Brown, S. Julier

Latency meter: a device end-to-end latency of VE systems [4660-57]

D. Miller, G. Bishop

SOFTWARE AND SYSTEMS

Arbitrary view image generation by model-based interpolation in the ray space [4660-58]

M. Sekitoh, T. Kutsuna, T. Fujii, T. Kimoto, M. Tanimoto

Application of computer-generated models using low-bandwidth vehicle data [4660-59]

N. Heyes

Low-cost projection-based virtual reality display [4660-60]

D. Pape, J. Anstey, G. Dawe

Design of an ultralight head-mounted projective display (HMPD) and its applications in augmented collaborative environments [4660-61]

H. Hua, C. Gao, L. Brown, F. Biocca, J. Rolland

Cyber entertainment system using an immersive networked virtual environment [4660-62]

M. Ihara, S. Honda, M. Kobayashi, S. Ishibashi

Stereoscopic displays for virtual reality in the car manufacturing industry: application to design review and ergonomic studies [4660-63]

G. Moreau, P. Fuchs

Volume 5006: Stereoscopic Displays and Virtual Reality Systems X (2003)

Editors: Andrew J. Woods, Mark T. Bolas, John O. Merritt, Stephen A. Benton

Preface

Part A: Stereoscopic Displays and Applications XIV

STEREOSCOPIC DISPLAY SYSTEMS

Binocular retinal scanning laser display with integrated focus cues for ocular accommodation [5006-5]

B. Schowengerdt, E. Seibel, J. Kelly, N. Silverman, T. Furness

Random dot stereograms generated with ray tracing as a visualization tool for evaluating stereoscopic camera systems [5006-2]

C. Dadson

Building a large-scale high-resolution tiled rear-projected passive stereo display system based on commodity components [5006-3]

G. Bresnahan, R. Gasser, A. Abaravichyus, E. Brisson, M. Waltermann

Investigation into screenless 3D TV [5006-4]

C. Moller, O. Cossairt, S. Benton, L. Stockbridge, A. Travis

Light loss reduction of LCD polarized stereoscopic projection [5006-1]

V. Elkhov, Y. Ovechkis

AUTOSTEREOSCOPIC DISPLAYS I: INTEGRAL IMAGING

Integral three-dimensional television based on superhigh-definition video system [5006-6]

J. Arai, M. Okui, M. Kobayashi, M. Sugawara, K. Mitani, H. Shimamoto, F. Okano

Full parallax images with a diamond shape pixel cell [5006-7]

J. Son, V. Saveljev, Y. Choi, S. Kim

Computer generation of integral 3D images with maximum effective viewing zone [5006-8]

J. Ren, A. Aggoun, M. McCormick

Integral 3D imaging that has an enhanced viewing angle along full directions with no mechanical movement [5006-9]

S. Jung, J. Park, H. Choi, B. Lee

Digital three-dimensional object reconstruction and correlation based on integral imaging [5006-10]

Y. Frauel, B. Javidi

AUTOSTEREOSCOPIC DISPLAYS II

High-resolution autostereoscopic immersive imaging display using a monocentric optical system [5006-12]

J. Cobb, D. Kessler, J. Agostinelli, M. Waldman

Real-image-based autostereoscopic display using LCD, mirrors, and lenses [5006-13]

H. Kakeya

Desktop autostereoscopic display using compact LED projector [5006-14]

H. Kaneko, T. Ohshima, O. Ebina, A. Arimoto

Second version of 3D display system by fan-like array of projection optics [5006-15]

T. Honda, M. Shimomatsu, H. Imai, S. Kobayashi, H. Nate, H. Iwane

AUTOSTEREOSCOPIC DISPLAYS III

Special features of stereo visualization in multichannel autostereoscopic display from 4D vision [5006-16]

I. Relke, B. Riemann

Full-time full-resolution dual stereoscopic/autostereoscopic display or rock-solid 3D on a flat screen: with glasses or without! [5006-18]

P. Kleinberger, I. Kleinberger, H. Goldberg, J. Mantinband, J. Johnson, J. Kirsch, B. Jones

Position- and velocity-depending subpixel correction for spatially multiplexed autostereoscopic displays [5006-19]

M. Andiel, S. Hentschke

Three-dimensional volumetric display by inclined-plane scanning [5006-20]

D. Miyazaki, T. Eto, Y. Nishimura, K. Matsushita

SOLID FELIX: a static volume 3D-laser display [5006-21]

K. Langhans, C. Guill, E. Rieper, K. Oltmann, D. Bahr

STEREOSCOPIC VIDEO

Parallax Player: a stereoscopic format converter [5006-22]

M. Feldman, L. Lipton

Development of the 960p stereoscopic video format [5006-23]

J. Goodman

Measurement of parallax distribution and its application to the analysis of visual comfort for stereoscopic HDTV [5006-24]

Y. Nojiri, H. Yamanoue, A. Hanazato, F. Okano

STEREOSCOPIC IMAGE CODING

Low-bandwidth stereoscopic image encoding and transmission [5006-25]

J. Flack, P. Harman, S. Fox

Perceptual evaluation of JPEG-coded stereoscopic images [5006-26]

P. Seuntjens, L. Meesters, W. IJsselstein

Effect of the compression of the depth map image on depth-fused 3D image quality [5006-27]

K. Uehira, K. Kono, K. Komiya, S. Suyama, H. Takada

Progressive coding of stereo images using a hybrid scheme [5006-28]

T. Palfner, E. Mueller

HUMAN FACTORS I

How crosstalk affects stereopsis in stereoscopic displays [5006-44]

K. Huang, J. Yuan, C. Tsai, W. Hsueh, N. Wang

Examination of a stereoscopic 3D display system using a correction lens [5006-47]

T. Kawai, T. Shibata, K. Ohta, Y. Yoshihara, T. Inoue, T. Iwasaki

Determinants of perceived image quality: ghosting vs. brightness [5006-31]

L. Wilcox, J. Stewart

Improving the visual comfort of stereoscopic images [5006-32]

L. Stelmach, W. Tam, F. Speranza, R. Renaud, T. Martin

Enhancement of stereoscopic comfort by fast control of frequency content with wavelet transform [5006-33]

N. Lemmer, G. Moreau, P. Fuchs

HUMAN FACTORS II

Evaluating accuracy and precision in a stereoscopic display: perception of 3D object motion [5006-34]

J. Harris

Comparison of stereoscopic and nonstereoscopic video images for visual telephone systems [5006-35]

W. Tam, A. Vincent, R. Renaud, P. Blanchfield, T. Martin

Survey of perceptual quality issues in three-dimensional television systems [5006-36]

L. Meesters, W. IJsselsteijn, P. Seuntjens

STEREOSCOPIC IMAGE PROCESSING

Stereoscopic visualization and reconstruction of turbulent flames [5006-37]

W. Ng, Y. Zhang

Artifact reduction in lenticular multiscopic 3D displays by means of anti-alias filtering [5006-38]

J. Konrad, P. Agniel

Producing anaglyphs from synthetic images [5006-39]

W. Sanders, D. McAllister

Hardware-accelerated autostereogram rendering for interactive 3D visualization [5006-40]

C. Petz, B. Goldluecke, M. Magnor

Adaptive disparity estimation scheme using balanced stereo image sequences [5006-41]

K. Bae, Y. Kim, S. Lee, E. Kim

Synthesizing stereo 3D views from focus cues in monoscopic 2D images [5006-42]

S. Aguirre Valencia, R. Rodriguez-Dagnino

POSTER POP SESSION

Parallel-axis stereoscopic camera with vergence control and multiplexing functions [5006-43]

G. Lee, N. Hur, C. Ahn, C. Ahn

Pioneering block-based stereo image CODEC in wavelet domain [5006-48]

E. Edirisinghe, M. Nayan, H. Bez

Large-scale projection using integral imaging techniques [5006-49]

R. Kotecha, M. McCormick, N. Davies

Automatic control of parallel stereoscopic camera by disparity compensation [5006-50]

K. Kwon, Y. Choi, N. Kim, S. Gil

Part B: The Engineering Reality of Virtual Reality 2003

TECHNIQUES AND APPLICATIONS

New visibility computing algorithm for three-dimensional indoor walkthroughs [5006-52]

Q. Liu, D. Li

Toward enhanced data consistency in distributed virtual environments [5006-54]

S. Kim, F. Kuester, K. Kim

Virtual immersive review for car design [5006-55]

D. Paillot, F. Merienne, M. Neveu, J. Frachet, S. Thivent

INPRES (intraoperative presentation of surgical planning and simulation results): augmented reality for craniofacial surgery [5006-67]

T. Salb, J. Brief, T. Welzel, B. Giesler, S. Hassfeld, J. Muehling, R. Dillmann

FOCUSED RESEARCH

Three-dimensional techniques for capturing and building virtual models of complex objects for use in scientific and industrial applications, data archiving, and the entertainment industry [5006-57]

A. Andersen, R. Chapman, B. Wilcox

Studying extinct animals using three-dimensional visualization, scanning, animation, and prototyping [5006-58]

R. Chapman, A. Andersen, B. Wilcox

Wearable augmented reality system using an IrDA device and a passometer [5006-59]

R. Tenmoku, M. Kanbara, N. Yokoya

Vision-based registration for augmented reality system using monocular and binocular vision [5006-60]

S. Vallerand, M. Kanbara, N. Yokoya

Calibration method for an omnidirectional multicamera system [5006-61]

S. Ikeda, T. Sato, N. Yokoya

AUGMENTED REALITY

Onboard camera pose estimation in augmented reality space for direct visual navigation [5006-62]

Z. Hu, K. Uchimura

Flexible augmented reality architecture applied to environmental management [5006-63]

N. Correia, T. Romao, C. Santos, A. Trabuco, R. Santos, L. Romero, J. Danado, E. Dias, A. Camara, E. Nobre

Real-time 3D hand tracking in a virtual environment [5006-64]

K. Smith, D. Sandin, T. Huang, J. Eliason, G. Baum

Hierarchical depth estimation for image synthesis in mixed reality [5006-65]

H. Kim, K. Sohn

VIDEO-BASED IMAGE TECHNIQUES AND EMERGING WORK

Experimental system of free viewpoint television [5006-66]

P. Na Bangchang, T. Fujii, M. Tanimoto

Depth keying [5006-68]

R. Gvili, A. Kaplan, E. Ofek, G. Yahav

Virtual reality applied to teletesting [5006-56]

T. van den Berg, R. Smeenk, A. Mazy, P. Jacques, L. Arguello, S. Mills

Interaction devices for hands-on desktop design [5006-69]

W. Ju, S. Madsen, J. Fiene, M. Bolas, I. McDowall, R. Faste

Volume 5291: Stereoscopic Displays and Virtual Reality Systems XI (2004)

Editors: Andrew J. Woods, John O. Merritt, Stephen A. Benton, Mark T. Bolas

Preface

Part A: Stereoscopic Displays and Applications XV

HUMAN FACTORS

Development and evaluation of amusement machine using autostereoscopic 3D display [5291-1]

T. Kawai, T. Shibata, Y. Shimizu, M. Kawata, M. Suto

Perception of 3D spatial relations for 3D displays [5291-2]

P. Rosen, Z. Pizlo, C. Hoffmann, V. Popescu

Stereo display for chest CT [5291-3]

X. Wang, W. Good, C. Fuhrman, J. Sumkin, C. Britton, T. Warfel, D. Gur

Development of a miniaturized system for monitoring vergence during viewing of stereoscopic imagery using a head-mounted display [5291-4]

S. Ames, N. McBrien

Variation and extrema of human interpupillary distance [5291-5]

N. Dodgson

STEREOSCOPIC COMPRESSION

Coding of multiview images [5291-6]

T. Palfner, E. Müller

Video memory compression for multiview autostereoscopic displays [5291-7]

B. Kaufmann, M. Akil

Multiresolution image compression using image foveation and simulated depth of field for stereoscopic displays [5291-8]

I. van der Linde

Novel viewing zone control method for computer-generated integral 3-D imaging [5291-62]

R. Fukushima, K. Taira, T. Saishu, Y. Hirayama

STEREOSCOPIC IMAGE PROCESSING AND RENDERING

Depth-image-based rendering (DIBR), compression, and transmission for a new approach on 3D-TV [5291-10]

C. Fehn

Non-orthogonal subsampling and anti-alias filtering for multiscopic 3D displays [5291-11]

J. Konrad, P. Agniel

Mapping perceived depth to regions of interest in stereoscopic images [5291-12]

N. Holliman

Mosaicing impossible stereo views [5291-13]

S. Peleg, D. Weinshall, D. Feldman, Y. Pritch

Virtual voxel: a quantitative figure of merit for autostereoscopic display technology and implementation [5291-14]

M. Siegel, L. Lipton

An immersive display with enhanced user/data access [5291-15]

S. Aubrey

STEREOSCOPIC CAMERA SYSTEMS

Real-time capturing and interactive synthesis of 3D scenes using integral photography [5291-16]

T. Yamamoto, T. Naemura

The camera convergence problem revisited [5291-17]

R. Allison

A real-time ray-space acquisition system [5291-18]

T. Fujii, M. Tanimoto

Development of a reliable and practical HD stereoscopic camera system [5291-19]

J. Lee, S. Nam, J. Lee, C. Park, Y. Joo, D. Petrov, Y. Kim, Y. Lee

An improved stereovision scheme using one camera and a composite lens array [5291-20]

H. Choi, J. Park, J. Hong, B. Lee

AUTOSTEREOSCOPIC DISPLAYS I

Assessment and improvement of the stereo-image visualization on X3D technologies 3D displays [5291-21]

I. Relke, M. Klippstein, B. Riemann

Temporally consistent virtual camera generation from stereo image sequences [5291-22]

S. Fox, J. Flack, J. Shao, P. Harman

Multiview 3D projection system [5291-23]

S. Kim, S. Shestak, K. Cha, J. Sung

AUTOSTEREOSCOPIC DISPLAYS II

Three-dimensional interaction with autostereoscopic displays [5291-24]

Z. Alpaslan, A. Sawchuk

The three-dimensional display for user interface in free viewpoint television system [5291-25]

T. Higashi, T. Fujii, M. Tanimoto

Implementation of projection-type autostereoscopic multiview 3D display system for real-time applications [5291-26]

Y.-G. Park, S.-C. Kim, S.-T. Lee, E.-S. Kim

AUTOSTEREOSCOPIC DISPLAYS III

Multiview autostereoscopic display with floating real image [5291-27]

H. Takeya, N. Kobe, H. Kasano

Step barrier system multiview glassless 3D display [5291-28]

K. Mashitani, G. Hamagishi, M. Higashino, T. Ando, S. Takemoto

Novel view sequential display based on DMD technology [5291-29]

O. Cossairt, A. Travis, C. Moller, S. Benton

DepthCube solid-state 3D volumetric display [5291-30]

A. Sullivan

The fabrication of a novel projection screen for autostereoscopic display systems [5291-31]

W.-J. Huang, C.-H. Tsai, N.-Y. Wang, K.-C. Huang

STEREOSCOPIC VIDEO

Production and evaluation of stereoscopic video presentation in surgical training [5291-32]

J. Ilgner, T. Kawai, M. Westhofen, T. Shibata

Visual comfort/discomfort and visual fatigue caused by stereoscopic HDTV viewing [5291-33]

Y. Nojiri, H. Yamanoue, A. Hanazato, M. Emoto, F. Okano

DepthQ: universal system for stereoscopic video visualization on WIN32 platform [5291-34]

M. Hušák, C. Ward

INTEGRAL 3D IMAGING

Improvement of integral 3D image quality by compensating for lens position errors [5291-36]

M. Okui, J. Arai, M. Kobayashi, F. Okano

Extraction and conversion of the 3D information for integral imaging [5291-37]

J.-H. Park, H. Choi, J. Hong, B. Lee

STEREOSCOPIC DEVELOPMENTS I

Dynamic dimension: system for simultaneous 3D and monoscopic viewing [5291-38]

A. Redert

HMD-type multifocus 3D display system [5291-39]

S.-K. Kim, J.-Y. Son, T. Honda

Ghosting in anaglyphic stereoscopic images [5291-40]

A. Woods, T. Rourke

STEREOSCOPIC DEVELOPMENTS II

Stereoscopic retinal scanning laser display with integrated focus cues for ocular accommodation [5291-41]

B. Schowengerdt, E. Seibel, N. Silverman, T. Furness

Implementation issues for the full-time full-resolution stereoscopic 3D flat panel display [5291-42]

J. Kirsch, B. Jones, J. Johnson, D. Chenault, I. Kleinberger, P. Kleinberger, H. Goldberg, J. Mantinband, M. Jones

POSTER POP SESSION

Camera system for autostereoscopic display using floating real image [5291-43]

I. Matsuda, H. Takeya

Design and feasibility test for directional diffractive optical elements for LCD-based stereoscopic systems [5291-44]

K. Choi, B. Lee

Depth-enhanced integral 3D imaging using a polarization-multiplexed display with different optical path lengths [5291-45]

S. Jung, J. Park, Y. Kim, B. Lee

Development of a stereoscopic 3D display system to observe restored heritage [5291-46]

H. Morikawa, M. Kawaguchi, T. Kawai, J. Ohya

Part B: The Engineering Reality of Virtual Reality 2004

SYNTHESIS AND DESIGN

Presentation of a large amount of moving objects in a virtual environment [5291-47]

H. Ye, J. Gong, J. Ye

The DAVRS environment for architecture design [5291-48]

Y. Liu, J.-Z. Sun, M.-C. Li, J.-W. Zhang

Experiments to evolve toward a tangible user interface for computer-aided design parts assembly [5291-49]

J. Legardeur, L. Garreau, N. Couture

RESEARCH PROGRAMS

Sharing skills: using augmented reality for human-robot collaboration [5291-52]

B. Giesler, P. Steinhaus, M. Walther, R. Dillmann

Jedi training: playful evaluation of head-mounted augmented reality display systems [5291-53]

C. Ozbek, B. Giesler, R. Dillmann

Shared database of annotation information for wearable augmented reality system [5291-54]

K. Makita, M. Kanbara, N. Yokoya

Immersive telepresence system using high-resolution omnidirectional movies and a locomotion interface [5291-55]

S. Ikeda, T. Sato, M. Kanbara, N. Yokoya

TECHNOLOGY AND APPLICATIONS

Real-time data fusion on stabilizing camera pose estimation output for vision-based road navigation [5291-57]

Z. Hu, K. Uchimura

Effect of visual distortion on postural balance in a full immersion stereoscopic environment [5291-58]

J. Faubert, R. Allard

Human factor integration into the development of a realistic tree-rendering system based on lidar remote sensing [5291-59]

I. Fujisaki, D. Evans, R. Moorhead, M. Mohammadi-Aragh, D. Irby, S. Roberts

Development of a 3D interaction table [5291-60]

J. Gustafsson, C. Lindfors

SPECIAL SESSION: VIRTUAL REALITY WORKS

Visual navigation structures in collaborative virtual environments [5291-61]

M. Dolinsky

Volume 5664: Stereoscopic Displays and Virtual Reality Systems XII (2005)

Editors: Andrew J. Woods, Mark T. Bolas, John O. Merritt, Ian E. McDowall

Preface

Part A: Stereoscopic Displays and Applications XVI

CONVERGENCE ACCOMMODATION ISSUES

Stereoscopic 3D display with dynamic optical correction for recovering from asthenopia [5664-1]

T. Shibata, T. Kawai, M. Otsuki, N. Miyake, Y. Yoshihara, T. Iwasaki

Creating a comfortable stereoscopic viewing experience: effects of viewing distance and field of view on fusional range [5664-2]

E. Jin, M. Miller, S. Endrikhovski, C. Cerosaletti

A fixed-viewpoint volumetric stereoscopic 3D display using adaptive optics [5664-3]

F. Shevlin

Natural 3D display with 128 directional images used for human-engineering evaluation [5664-4]

H. Nakanuma, H. Kamei, Y. Takaki

Predicting individual fusional range from optometric data [5664-5]

S. Endrikhovski, E. Jin, M. Miller, R. Ford

HUMAN FACTORS

Thin-type natural three-dimensional display with 72 directional images [5664-68]

Y. Takaki

Stereo-foveation for anaglyph imaging [5664-6]

A. Coltekin

Accommodative load for stereoscopic displays [5664-79]

M. Omori, S. Ishihara, S. Hasegawa, H. Ishigaki, T. Watanabe, M. Miyao, H. Tahara

Perceived smoothness of viewpoint transition in multi-viewpoint stereoscopic displays [5664-9]

F. Speranza, W. Tam, T. Martin, L. Stelmach, C. Ahn

STEREOSCOPIC IMAGE PROCESSING

Camera system for arbitrary viewpoint 3D display system [5664-10]

H. Takahashi, Y. Nakano, K. Yamada

Real-time stereo imaging of gaseous phenomena [5664-11]

T. Johnson, D. McAllister

Stereoscopic image rendering based on depth maps created from blur and edge information [5664-12]

W. Tam, A. Yee, J. Ferreira, S. Tariq, F. Speranza

An extended H.264 CODEC for stereoscopic video coding [5664-13]

B. Balasubramaniam, E. Edirisinghe, H. Bez

Recovery of a missing color component in stereo images (or helping NASA find little green Martians) [5664-14]

S. Ince, J. Konrad

AUTOSTEREOSCOPIC DISPLAYS

Autostereoscopic desktop display: an evolution of technology [5664-15]

J. Cobb

Time-multiplexed autostereoscopic flat panel display using an optical wedge [5664-16]

C. Moller, A. Travis

Multi-view image integration system for glass-less 3D display [5664-17]

T. Ando, K. Mashitani, M. Higashino, H. Kanayama, H. Murata, Y. Funazou, N. Sakamoto, H. Hazama, Y. Ebara, K. Koyamada

Three-dimensional multiview large projection system [5664-18]

I. Relke, B. Riemann

Correction of aberrations in lens-based 3D displays [5664-19]

S. Daniell

2D TO 3D CONVERSION

[Interactive 2D to 3D stereoscopic image synthesis \[5664-21\]](#)

M. Feldman, L. Lipton

[Automatic video to stereoscopic video conversion \[5664-20\]](#)

E. Rotem, K. Wolowelsky, D. Pelz

STEREOSCOPIC VIDEO

[New version of HD stereoscopic camera and its picture quality assessment concerning the camera parameters \[5664-22\]](#)

J.-Y. Lee, S.-J. Nam, J.-H. Lee, C.-S. Park, P. Dmitry, Y.-G. Kim, Y. Lee

[Pre-rendered stereoscopic movies for commodity display systems \[5664-23\]](#)

J. Moreland, L. Arns, W. Meador

[OpenGL hardware accelerated algorithms for autostereoscopic monitor pattern creation \[5664-24\]](#)

M. Hušák, C. Ward

[Integral 3D imaging system using monocular 2D video and depth data \[5664-25\]](#)

K. Suehiro, H. Nakamura, K. Yamada, S. Nakamura, T. Sugahara

STEREOSCOPIC DEVELOPMENTS

[Tri-stack 3D LCD monitor \[5664-26\]](#)

A. Loukianitsa, A. Yarovoy, K. Kanashin

[Full-color autostereoscopic video display system using computer-generated synthetic phase holograms \[5664-27\]](#)

K. Choi, H. Kim, B. Lee

[Real-time holographic video images with commodity PC hardware \[5664-28\]](#)

V. Bove, W. Plesniak, T. Quentmeyer, J. Barabas

[Low-loss filter for stereoscopic projection with LCD projectors \[5664-29\]](#)

O. Stefani, M. Bues, R. Blach, A. Bullinger

DEPTH MAPPING

[Three-dimensional scene reconstruction using multiview images and depth camera \[5664-30\]](#)

G.-M. Um, K. Kim, C. Ahn, K. Lee

[Smoothing region boundaries in variable depth mapping for real-time stereoscopic images \[5664-31\]](#)

N. Holliman

VOLUMETRIC 3D DISPLAYS

[Laser-induced image technology \(yesterday, today, and tomorrow\) \[5664-32\]](#)

I. Troitski

[Spatial 3D infrastructure: display-independent software framework, high-speed rendering electronics, and several new displays \[5664-33\]](#)

W. Chun, J. Napoli, O. Cossairt, R. Dorval, D. Hall, T. Purtell, J. Schooler, Y. Banker, G. Favalora

[Optical system which projects small volumetric images to very large size \[5664-34\]](#)

J. Eichenlaub

[Exploring interaction with 3D volumetric displays \[5664-35\]](#)

T. Grossman, D. Wigdor, R. Balakrishnan

INTEGRAL 3D DISPLAYS

Three-dimensional electro-floating display system based on integral imaging technique [5664-37]

S. Min, J. Kim, B. Lee

Projection-type integral 3D imaging using multifacet flat mirrors [5664-38]

S. Jung, S. Shestak, K. Cha, T. Kim, T. Ha, J. Koo, S. Kim

Autostereoscopic liquid crystal display using mosaic color pixel arrangement [5664-39]

K. Taira, R. Fukushima, T. Saishu, H. Kobayashi, Y. Hirayama

Long viewing distance autostereoscopic display [5664-40]

H. Liao, M. Iwahara, Y. Katayama, N. Hata, T. Dohi

TELEMANIPULATOR AND TELEPRESENCE TECHNOLOGIES

Effect of reduced stereoscopic camera separation on ring placement with a surgical telerobot [5664-41]

S. Ellis, J. Fishman, C. Hasser, J. Stern

Networked telepresence system using web browsers and omni-directional video streams [5664-43]

T. Ishikawa, K. Yamazawa, T. Sato, S. Ikeda, Y. Nakamura, K. Fujikawa, H. Sunahara, N. Yokoya

Fire training in a virtual-reality environment [5664-44]

E. Freund, J. Rossmann, A. Bucken

STEREOSCOPIC DISPLAY APPLICATIONS

Stereoscopy in orthopaedics [5664-47]

S. Tan

POSTER SESSION

Stereoscopic player and stereoscopic multiplexer: a computer-based system for stereoscopic video playback and recording [5664-67]

P. Wimmer

Three-dimensional visualization of human fundus from a sequence of angiograms [5664-69]

F. Laliberte, L. Gagnon, Y. Sheng

Analysis of the viewing parameters for curved lens array system based on integral imaging [5664-70]

Y. Kim, S.-W. Min, J.-H. Park, B. Lee

Block-wise MAP disparity estimation for intermediate view reconstruction [5664-71]

L. Zhang

A new configuration of LCD-polarized stereoscopic projection system without light loss [5664-72]

S.-C. Kim, D.-K. Kim, D.-H. Kim, E.-S. Kim

Stereoscopic painting with varying levels of detail [5664-73]

E. Stavrakis, M. Gelautz

Coding of full-parallax multiview images [5664-74]

T. Palfner, E. Muller

Physical modeling of a microlens array setup for use in computer generated IP [5664-75]

S. Athineos, N. Sgouros, P. Papageorgas, D. Maroulis, M. Sangriotis, N. Theofanous

Stereoscopic display which shows 3D natural scenes without contradiction of accommodation and convergence [5664-76]

T. Akutsu, H. Kakeya

An innovative beamsplitter-based stereoscopic/3D display design [5664-77]

J. Fergason, S. Robinson, C. McLaughlin, B. Brown, A. Abileah, T. Baker, P. Green

McLiflet: multiple cameras for light field live with thousands of lenslets [5664-78]

M. Kojima, T. Naemura

Reduction of the distortion due to non-ideal lens alignment in lenticular 3D displays [5664-80]

Y. Lee, J. Ra

Part B: The Engineering Reality of Virtual Reality 2005

SYSTEMS I

Passive method of eliminating accommodation/convergence disparity in stereoscopic head-mounted displays [5664-49]

J. Eichenlaub

Reusable methodology based on filters in order to define relevant tangible parts for a TUI [5664-50]

F. Depaulis, N. Couture, J. Legardeur, L. Garreau

WebVR: an interactive web browser for virtual environments [5664-51]

E. Barsoum, F. Kuester

A global-timestamp-based approach to construct a real-time distributed tiled display system [5664-53]

S. Kim, F. Kuester, K. Kim

MIXED REALITIES

Projection-based augmented reality with automated shape scanning [5664-54]

Y. Yasumuro, M. Imura, Y. Manabe, O. Oshiro, K. Chihara

Localization of wearable users using invisible retro-reflective markers and an IR camera [5664-55]

Y. Nakazato, M. Kanbara, N. Yokoya

Toward natural fiducials for augmented reality [5664-56]

P. Kitchin, K. Martinez

3D reconstruction of outdoor environments from omnidirectional range and color images [5664-57]

T. Asai, M. Kanbara, N. Yokoya

SYSTEMS II

Large-format 3D interaction table [5664-58]

J. Gustafsson, C. Lindfors, L. Mattsson, T. Kjellberg

Stereoscopic stimuli are not used in absolute distance evaluation to proximal objects in multicue virtual environment [5664-59]

D. Paille, A. Kemeny, A. Berthoz

ShadowLight: an immersive environment for rapid prototyping and design [5664-60]

K. Leetaru

SYSTEMS III

Quantitative comparison of interaction with shutter glasses and autostereoscopic displays [5664-61]

Z. Alpaslan, S. Yeh, A. Rizzo, A. Sawchuk

Experiments in interactive panoramic cinema [5664-63]

S. Fisher, S. Anderson, S. Ruiz, M. Naimark, P. Hoberman, M. Bolas, R. Weinberg

Import and visualization of clinical medical imagery into multiuser VR environments [5664-64]

A. Mehrle, W. Freysinger, R. Kikinis, A. Gunkel, F. Kral

VIRTUAL REALITY WORKS: DEMONSTRATION AND PANEL DISCUSSION

[Collaborative virtual environments art exhibition \[5664-65\]](#)

M. Dolinsky, J. Anstey, D. Pape, J. Aguilera, H. Kostis, D. Tsoupikova

Volume 6055: Stereoscopic Displays and Virtual Reality Systems XIII (2006)

Editors: Andrew J. Woods, Neil A. Dodgson, John O. Merritt, Mark T. Bolas, Ian E. McDowall

[Preface](#)

Part A: Stereoscopic Displays and Applications XVII

ENTERTAINMENT, VISUALIZATION, AND TRAINING: APPLICATIONS OF STEREOSCOPY

[The use of stereoscopic visualization in chemistry and structural biology \[6055-1\]](#)

M. Hušák

[Using stereoscopic real-time graphics to shorten training time for complex mechanical tasks \[6055-2\]](#)

F. Tecchia, M. Carrozzino, F. Rossi, M. Bergamasco, M. Vescovi, F. Pisu

[Stereoscopic display of 3D models for design visualization \[6055-3\]](#)

K. Gilson

[Stereoscopic image production: live, CGI, and integration \[6055-4\]](#)

E. Criado

[Cosmic cookery: making a stereoscopic 3D animated movie \[6055-5\]](#)

N. Holliman, C. Baugh, C. Frenk, A. Jenkins, B. Froner, D. Hassaine, J. Helly, N. Metcalfe, T. Okamoto

MEDICAL APPLICATIONS OF STEREOSCOPY

[Evaluation of stereoscopic medical video content on an autostereoscopic display for undergraduate medical education \[6055-6\]](#)

J. Ilgner, T. Kawai, T. Shibata, T. Yamazoe, M. Westhofen

[Stereoscopic visualization and editing of automatic abdominal aortic aneurysms \(AAA\) measurements for stent graft planning \[6055-7\]](#)

L. Zhou, Y. Wang, L.-C. Goh, R. Kockro, L. Serra

[A hybrid virtual environment for training of radiotherapy treatment of cancer. \[6055-8\]](#)

R. Phillips, J. Ward, P. Bridge, R. Appleyard, A. Beavis

[Blur spot limitations in distal endoscope sensors \[6055-9\]](#)

A. Yaron, M. Shechterman, N. Horesh

PERCEPTION AND PERFORMANCE: STEREOSCOPIC HUMAN FACTORS

[Visual comfort with mobile stereoscopic gaming \[6055-10\]](#)

J. Häkkinen, M. Liinasuo, J. Takatalo, G. Nyman

[Effect of disparity and motion on visual comfort of stereoscopic images \[6055-11\]](#)

F. Speranza, W. Tam, R. Renaud, N. Hur

[Analysis of an autostereoscopic display: the perceptual range of the three-dimensional visual fields and saliency of static depth cues \[6055-12\]](#)

P. Havig, J. McIntire, R. McGruder

[Effects of gender, application, experience, and constraints on interaction performance using autostereoscopic displays \[6055-13\]](#)

Z. Alpaslan, A. Sawchuk, A. Rizzo, S. Yeh

Examination of asthenopia recovery using stereoscopic 3D display with dynamic optical correction [6055-14]

T. Shibata, T. Kawai, K. Ohta, J. Lee, M. Otsuki, N. Miyake, Y. Yoshihara, T. Iwasaki

STEREOSCOPIC PROJECTION AND STEREOSCOPIC CINEMA

High-resolution insets in projector-based stereoscopic displays: principles and techniques [6055-15]

G. Godin, P. Massicotte, L. Borgeat

Stereo projection using interference filters [6055-16]

H. Jorke, M. Fritz

Development of the real-time stereoscopic error corrector and convergence controller [6055-55]

S.-J. Nam, C.-S. Park, Y.-S. Yu, K. Lee

Permanent synchronization of camcorders via LANC protocol [6055-80]

D. Vrancic, S. Smith

STEREOSCOPIC IMAGE PROCESSING

Platelet-based coding of depth maps for the transmission of multiview images [6055-19]

Y. Morvan, P. de With, D. Farin

Efficient view synthesis from uncalibrated stereo [6055-20]

R. Braspenning, M. Op de Beeck

A fast image multiplexing method robust to viewer's position and lens misalignment in lenticular 3D displays [6055-21]

Y.-G. Lee, J. Ra

MAKING PICTURES: STEREOSCOPIC RENDERING

Real-time rendering for multiview autostereoscopic displays [6055-22]

R. Berretty, F. Peters, G. Volleberg

Anisotropic scene geometry resampling with occlusion filling for 3DTV applications [6055-23]

J. Kim, T. Sikora

Distributed rendering for multiview parallax displays [6055-24]

T. Annen, W. Matusik, H. Pfister, H. Seidel, M. Zwicker

AUTOSTEREOSCOPIC DISPLAYS I

On the number of viewing zones required for head-tracked autostereoscopic display [6055-25]

N. Dodgson

Multiview LCD wall system [6055-26]

I. Relke

Flatbed-type autostereoscopic display system and its image format for encoding [6055-27]

T. Saishu, S. Numazaki, K. Taira, R. Fukushima, A. Morishita, Y. Hirayama

Autostereoscopic 3D Display [6055-28]

A. Schwerdtner

The HoloVizio system [6055-29]

T. Balogh

AUTOSTEREOSCOPIC DISPLAYS II

Development of autostereoscopic display system for remote manipulation [6055-30]

T. Honda, Y. Kuboshima, K. Iwane, T. Shiina

Ray-space acquisition and reconstruction within cylindrical objective space [6055-31]

T. Yendo, T. Fujii, M. Tanimoto

72-directional display having VGA resolution for high-appearance image generation [6055-32]

Y. Takaki, T. Dairiki

Combining volumetric edge display and multiview display for expression of natural 3D images [6055-33]

R. Yasui, I. Matsuda, H. Kakeya

Adaptive parallax control for multi-view stereo panoramas [6055-34]

C. Wang, A. Sawchuk

INTEGRAL 3D IMAGING

Integral videography of high-density light field with spherical layout camera array [6055-35]

T. Koike, M. Oikawa, N. Kimura, F. Beniyama, T. Moriya, M. Yamasaki

Imaging properties of microlens arrays for integral imaging system [6055-36]

J. Arai, M. Okui, Y. Nojiri, F. Okano

Comparative study on 3D-2D convertible integral imaging systems [6055-37]

H. Choi, J. Kim, Y. Kim, B. Lee

STEREOSCOPIC SOFTWARE

A uniform metric for anaglyph calculation [6055-51]

Z. Zhang, D. McAllister

Application of 3DHiVision: a system with a new 3D HD renderer [6055-39]

P. Sun, S. Nagata

KEYNOTE PRESENTATION

3D animation in three dimensions: the rocky road to the obvious [6055-40]

H. Murray

STEREOSCOPIC DEVELOPMENTS

A method for the real-time construction of a full parallax light field [6055-41]

K. Tanaka, S. Aoki

Simulation of 3D image depth perception in a 3D display using two stereoscopic displays at different depths [6055-43]

K. Uehira

Innovative stereoscopic display using variable polarized angle [6055-44]

J. Gaudreau, M. Bechamp, B. MacNaughton, V. Power

A novel walk-through 3D display [6055-45]

S. DiVerdi, I. Rakkolainen, T. Höllerer, A. Olwal

POSTER SESSION

Real-time stereographic display of volumetric datasets in radiology [6055-46]

X. Wang, G. Maitz, J. Leader, W. Good

Ergonomic evaluation system for stereoscopic video production [6055-47]

T. Kawai, S. Kishi, T. Yamazoe, T. Shibata, T. Inoue, Y. Sakaguchi, K. Okabe, Y. Kuno, T. Kawamoto

Wide-viewing-angle three-dimensional display system using HOE lens array [6055-48]

H. Takahashi, H. Fujinami, K. Yamada

Depth maps created from blur information using images with focus at near and at far [6055-49]

S. Cho, W. Tam, F. Speranza, R. Renaud, N. Hur, S. Lee

Depth map-based disparity estimation technique using multiview and depth camera [6055-50]

G.-M. Um, S.-M. Kim, N. Hur, K. Lee, S. Lee

Multiview autostereoscopic display with double-sided reflecting scanning micromirrors [6055-53]

A. Nakai, K. Hoshino, K. Matsumoto, I. Shimoyama

A depth-enhanced floating display system based on integral imaging [6055-54]

J. Kim, S.-W. Min, Y. Kim, S.-W. Cho, H. Choi, B. Lee

Three-dimensional sprites for lenticular-type three-dimensional display [6055-56]

T. Dairiki, Y. Takaki

Optical design considerations for a beam combiner in a StereoMirror (TM) 3D display system [6055-57]

A. Hochbaum, J. Fergason

Performance analysis of a compact electro-optical 3D adapter with a wide capturing angle [6055-61]

S.-C. Kim, D.-H. Lee, J.-G. Lee, E.-S. Kim

New method of zoom-convergence interlocked control in the moving parallel-axes style stereoscopic camera [6055-62]

J. Lee, S. Nam, J. Lee, C. Park, S. Chung

Part B: The Engineering Reality of Virtual Reality 2006

PROCEDURES

Texturing of continuous LoD meshes with the hierarchical texture atlas [6055-63]

H. Birkholz

Multiprojector image distortion correction scheme for curved screens on the example of the Cybersphere [6055-65]

B. Shulgin, J. Ye, V. Raja

3D workflow for HDR image capture of projection systems and objects for CAVE virtual environments authoring with wireless touch-sensitive devices [6055-66]

M. Prusten, M. McIntyre, M. Landis

APPLICATIONS

Virtual technical support for field engineers in the water and ventilation hygiene industry [6055-68]

I. Nicholas, D. Kim

Virtual reality in construction industry: a requirement compatibility analysis approach [6055-69]

J. Ye, B. Shulgin, V. Raja

Adding tactile realism to a virtual reality laparoscopic surgical simulator with a cost-effective human interface device [6055-70]

I. Mack, S. Potts, K. McMenemy, R. Ferguson

THE MEDIUM

Inverse perspective [6055-71]

M. Dolinsky

Virtual reality and the unfolding of higher dimensions [6055-72]

J. Aguilera

Framing the magic [6055-73]

D. Tsoupikova

[Virtual reality, immersion, and the unforgettable experience \[6055-74\]](#)

J. Morie

VIEWPOINTS

[Teleoperation interface for mobile robot with perspective-transformed virtual 3D screen on PC display \[6055-75\]](#)

T. Kimura, H. Kakeya

[An interactive camera placement and visibility simulator for image-based VR applications \[6055-77\]](#)

A. State, G. Welch, A. Ilie

[Synthecology: sound use of audio in teleimmersion \[6055-79\]](#)

G. Baum, M. Gotsis, B. Chang, R. Drinkwater, D. St. Clair

Volume 6490: Stereoscopic Displays and Virtual Reality Systems XIV (2007)

Editors: Andrew J. Woods, Neil A. Dodgson, John O. Merritt, Mark T. Bolas, Ian E. McDowall

Preface

Part A: Stereoscopic Displays and Applications XVIII

STEREOSCOPIC DISPLAY APPLICATIONS

[Stereoscopic applications for design visualization \[6490-1\]](#)

K. Gilson

[A novel technique for visualizing high-resolution 3D terrain maps \[6490-68\]](#)

J. Dammann

[Evolution of the Varrier autostereoscopic VR display: 2001-2007 \[6490-3\]](#)

T. Peterka, R. Kooima, J. Girado, J. Ge, D. Sandin, T. DeFanti

[Re-engineering the stereoscope for the 21st Century \[6490-4\]](#)

J. Kollin, A. Hollander

[A Cohesive Modular System for Real-Time Stereoscopic Secure Image Processing and Evaluation \[6490-5\]](#)

R. Galli, E. Lazarus

MEDICAL APPLICATIONS OF STEREOSCOPY

[Stereoscopic medical imaging collaboration system \[6490-6\]](#)

F. Okuyama, T. Hirano, Y. Nakabayasi, H. Minoura, S. Tsuruoka

[Using a high-definition stereoscopic video system to teach microscopic surgery \[6490-7\]](#)

J. Ilgner, J. Park, D. Labbé, M. Westhofen

[Miniature stereoscopic video system provides real-time 3D registration and image fusion for minimally invasive surgery \[6490-8\]](#)

A. Yaron, M. Bar-Zohar, N. Horesh

[A virtual reality oriented clinical experiment on post-stroke rehabilitation: performance and preference comparison among different stereoscopic displays \[6490-9\]](#)

S. Yeh, A. Rizzo, A. Sawchuk

STEREOSCOPIC IMAGE PROCESSING AND INTERMEDIATE VIEW RECONSTRUCTION

[A novel triangulation method for building parallel-perspective stereo mosaics \[6490-10\]](#)

P. Gurram, E. Saber, H. Rhody

Surrogate depth maps for stereoscopic imaging: different edge types [6490-11]

W. Tam, C. Vázquez, F. Speranza

Object-based disparity adjusting tool for stereo panorama [6490-12]

C. Wang, C.-Y. Chang, A. Sawchuk

View generation for 3D-TV using image reconstruction from irregularly spaced samples [6490-13]

C. Vázquez

Spline-based intermediate view reconstruction [6490-14]

S. Ince, J. Konrad, C. Vázquez

STEREOSCOPIC HUMAN FACTORS

Vertical surround parallax correction [6490-15]

L. Lipton

An application driven comparison of depth perception on desktop 3D displays [6490-16]

N. Holliman, B. Froner, S. Liversedge

Visual discomfort in stereoscopic displays: a review [6490-17]

M. Lambooj, W. IJsselsteijn, I. Heynderickx

MOEvision: simple multiview display with clear floating image [6490-18]

H. Kakeya

STEREOSCOPY ON MOBILE DEVICES

Autostereoscopic display technology for mobile 3DTV applications [6490-19]

J. Harrold, G. Woodgate

A 470 x 235 ppi LCD for high-resolution 2D and 3D autostereoscopic display and user aptitude investigation results for mobile phone applications [6490-20]

N. Takanashi, S. Uehara, H. Asada

A prototype 3D mobile phone equipped with a next-generation autostereoscopic display [6490-21]

J. Flack, J. Harrold, G. Woodgate

MULTIVIEW CONTENT

Multiple footprint stereo algorithms for 3D display content generation [6490-22]

F. Boughorbel

Compression of still multiview images for 3-D automultiscopic spatially-multiplexed displays [6490-23]

R. Lau, S. Ince, J. Konrad

Predictive Coding of Depth Images Across Multiple Views [6490-24]

Y. Morvan, D. Farin, P. de With

AUTOSTEREOSCOPIC DISPLAYS

Application of Pi-cells in time-multiplexed stereoscopic and autostereoscopic displays based on LCD panels [6490-25]

S. Shestak, D. Kim

Switchable lenticular based 2D/3D displays [6490-26]

D. de Boer, M. Hiddink, M. Sluijter, O. Willemsen, S. de Zwart

Multiview autostereoscopic display of 36 view using ultrahigh resolution LCD [6490-27]

B. Lee, H. Hong, J. Park, H. Park, H. Shin, I. Jung

Autostereoscopic display with 60 ray directions using LCD with optimized color filter layout [6490-28]

T. Koike, M. Oikawa, K. Utsugi, M. Kobayashi, M. Yamasaki

Development of SVGA resolution 128-directional display [6490-29]

K. Kikuta, Y. Takaki

STEREOSCOPIC DEVELOPMENTS

The compatibility of consumer DLP projectors with time-sequential stereoscopic 3D visualisation [6490-30]

A. Woods, T. Rourke

The fabrication of microretarder for in-cell stereoscopic LCD using reactive liquid crystal [6490-31]

G.-F. Tseng, C.-H. Tsai, H. Lin, W.-J. Huang, K.-C. Huang, K. Lee

Enabling stereoscopic 3D technology [6490-32]

G. Sharp, M. Robinson

Realization of electronic 3D display combining multiview and volumetric solutions [6490-33]

H. Ebisu, T. Kimura, H. Kakeya

Advanced multiscopic display via temporal multiplexing [6490-34]

V. Markov, S. Kupiec, A. Travis, D. Hopper, G. Sani

CROSSTALK IN STEREOSCOPIC AND AUTOSTEREOSCOPIC DISPLAYS

Optical cross-talk and visual comfort of a stereoscopic display used in a real-time application [6490-36]

S. Pala, R. Stevens, P. Surman

Crosstalk in automultiscopic 3-D displays: Blessing in disguise? [6490-37]

A. Jain, J. Konrad

STEREOSCOPIC VISION

DV/HDV tape drive synchronization for immediate preview of dual camera recordings [6490-38]

P. Wimmer

Real-time embedded system for stereo video processing for multiview displays [6490-39]

R. Berretty, A. Riemens, P. Machado

INTEGRAL 3D DISPLAYS

Integral photography suitable for small-lot production using mutually perpendicular lenticular sheets and fractional view [6490-41]

K. Yanaka

Scan-type image capturing system using a cylindrical lens for one-dimensional integral imaging [6490-42]

Y. Momonoi, K. Taira, Y. Hirayama

Integral imaging system using an array of planar mirrors [6490-43]

J. Arai, M. Kawakita, F. Okano

Enhanced algorithm of image mapping method for computer-generated integral imaging system [6490-54]

S.-W. Min, K. Park, T.-C. Poon

POSTER SESSION

Time-multiplexed autostereoscopic display with content-defined 2D/3D mode selection [6490-53]

S. Shestak, D. Kim, K. Cha, J. Koo

3D from compressed 2D video [6490-55]

I. Ideses, L. Yaroslavsky, B. Fishbain, R. Vistuch

Volumetric display by inclined-image scanning and three-dimensional image transmission based on optical shape measurement [6490-56]

D. Miyazaki, K. Soutsuka, T. Honda, T. Mukai

Ray-space acquisition using parabolic mirror [6490-58]

T. Ichiyonagi, T. Yendo, T. Fujii, M. Tanimoto

Free viewpoint image generation using multipass dynamic programming [6490-59]

N. Fukushima, T. Yendo, T. Fujii, M. Tanimoto

Generation of binocular object movies from monocular object movies [6490-60]

Y.-R. Chen, W.-Y. Lo, Y.-P. Tsai, Y.-P. Hung

Volumetric three-dimensional display using transparent rotating Lanthanide(III) complexes sheet [6490-61]

S. Hisatake, S. Suda, J. Takahara, T. Kobayashi

Usability in virtual and augmented environments: a qualitative and quantitative study [6490-63]

P. Dias, A. Pimentel, C. Ferreira, F. Huussen, J. Baggerman, P. der Horst, J. Madeira, R. Bidarra, B. Santos

Improvement of the voxels density of three-dimensional image display by spatially multiplexing fluxes in light-ray-flux reproduction method [6490-64]

S. Hisatake, T. Kobayashi

Curved integral imaging scheme using an additional large-aperture lens [6490-65]

D.-H. Shin, Y. Kim, B. Lee, E.-S. Kim

Psychophysical estimation of 3D virtual depth of united, synthesized, and mixed-type stereograms by means of simultaneous observation [6490-66]

M. Iizuka, Y. Ookuma, Y. Nakashima, M. Takamatsu

Recognition of 3D objects by use of computational integral imaging reconstruction [6490-67]

J.-S. Park, D.-C. Hwang, D.-H. Shin, J.-B. Hyun, J.-K. Lee, H.-H. Kang, E.-S. Kim

A point-based tele-immersion system: from acquisition to stereoscopic display [6490-70]

D. Ruiz, B. Maison, J. Bruyelle, X. Desurmont, B. Macq

Real-time photorealistic stereoscopic rendering of fire [6490-71]

B. Rose, D. McAllister

Part B: The Engineering Reality of Virtual Reality 2007

VIRTUAL ENVIRONMENTS: IMPLEMENTATION

Stereo cameras on the International Space Station [6490-46]

M. Sabbatini, G. Visentin, M. Collon, H. Ranebo, D. Sunderland, R. Fortezza

Latency compensation by horizontal scanline selection for head-mounted displays [6490-47]

J. Jerald, A. Fuller, A. Lastra, M. Whitton, L. Kohli, F. Brooks

A novel wide-field-of-view display method with higher central resolution for hyper-realistic head dome projector [6490-48]

A. Hotta, T. Sasaki, H. Okumura

Tangible mixed-reality desktop for digital media management [6490-49]

S. Winkler, H. Yu, Z. Zhou

VIRTUAL ENVIRONMENTS: THE EXPERIENCE

Passing excellence [6490-50]

D. Tsoupikova

CytoViz: an artistic mapping of network measurements as living organisms in a VR application [6490-51]

B. López Silva, L. Renambot

Skin: an interactive hyperstereoscopic electro installation [6490-52]

H. Kostis, R. Kooima, J. Kannenberg

Volume 6803: Stereoscopic Displays and Applications XIX (2008)

Editors: Andrew J. Woods, Nicolas S. Holliman, John O. Merritt

Preface

STEREOSCOPIC IMAGE QUALITY AND IMAGE PROCESSING

[Reconstruction of stereoscopic imagery for visual comfort \[6803-1\]](#)

H. Kim, J. Choi, A.-J. Chang, K. Yu

[Imaging artifact precompensation for spatially multiplexed 3-D displays \[6803-2\]](#)

J. Napoli, S. Dey, S. Stutsman, O. Cossairt, T. Purtell, S. Hill, G. Favalora

[Stereoscopic image quality metrics and compression \[6803-3\]](#)

P. Gorley, N. Holliman

[Methods for improving the quality of user created stereoscopic content \[6803-4\]](#)

L. Pockett, M. Salmimaa

[A novel quality metric for evaluating depth distribution of artifacts in coded 3D images \[6803-5\]](#)

R. Olsson, M. Sjöström

VOLUMETRIC DISPLAYS

[Hologlyphics: volumetric image synthesis performance system \[6803-51\]](#)

W. Funk

[Laser-plasma scanning 3D display for putting digital contents in free space \[6803-7\]](#)

H. Saito, H. Kimura, S. Shimada, T. Naemura, J. Kayahara, S. Jarusirisawad, V. Nozick, H. Ishikawa, T. Murakami, J. Aoki, A. Asano, T. Kimura, M. Kakehata, F. Sasaki, H. Yashiro, M. Mori, K. Torizuka, K. Ino

[A novel 3D display using two lens arrays and shift of element images \[6803-8\]](#)

A. Takeichi, T. Yendo, T. Fujii, M. Tanimoto

[Advances in passive imaging elements with micromirror array \[6803-9\]](#)

S. Maekawa, K. Nitta, O. Matoba

STEREOSCOPIC HUMAN FACTORS

[Distortion of depth perception in virtual environments using stereoscopic displays: quantitative assessment and corrective measures \[6803-10\]](#)

M. Kleiber, C. Winkelholz

[Optical analysis on induction of focal accommodation using cylindrical lenses \[6803-11\]](#)

Y. Mano, H. Kakeya

[Evaluation of the influence on the human body of the autostereoscopic display based on the integral imaging method \[6803-12\]](#)

H. Nagatani, Y. Hirayama

[Scalable 3D image conversion and ergonomic evaluation \[6803-13\]](#)

S. Kishi, S. Kim, T. Shibata, T. Kawai, J. Häkkinen, J. Takatalo, G. Nyman

[Depth control method for integral imaging using elemental image data processing \[6803-14\]](#)

J. Arai, H. Kawai, M. Kawakita, F. Okano

MULTIVIEW 3D CONTENT

[Real-time interactive 3D computer stereography for recreational applications \[6803-55\]](#)

A. Miyazawa, M. Ishii, K. Okuzawa, R. Sakamoto

Flexible pixel compositor for autostereoscopic displays [6803-16]

R. Yang, S. Krishnan, J. Heath

Adaptive filters for depth from stereo and occlusion detection [6803-17]

F. Boughorbel

GPU-based algorithms for optimized visualization and crosstalk mitigation on a multiview display [6803-18]

A. Boev, K. Raunio, A. Gotchev, K. Egiazarian

AUTOSTEREOSCOPIC DISPLAYS I

An autostereoscopic display with high resolution and large number of view zones [6803-19]

W.-L. Chen, W.-L. Hsu, C.-H. Tsai, C.-L. Wang, C.-S. Wu, J.-C. Yang, S.-C. Cheng

Large holographic displays as an alternative to stereoscopic displays [6803-20]

R. Häussler, A. Schwerdtner, N. Leister

Multiview multiperspective time multiplexed autostereoscopic display [6803-21]

S. Kupiec, V. Markov, D. Hopper, G. Saini

AUTOSTEREOSCOPIC DISPLAYS II

1-inch diagonal transfective 2D and 3D LCD with HDDP arrangement [6803-22]

S. Uehara, T. Hiroya, H. Kusanagi, K. Shigemura, H. Asada

Time-multiplexing display module for high-density directional display [6803-23]

T. Kanebako, Y. Takaki

Technical solutions for a full-resolution autostereoscopic 2D/3D display technology [6803-24]

H. Stolle, J. Olaya, S. Buschbeck, H. Sahm, A. Schwerdtner

DIGITAL 3D STEREOSCOPIC ENTERTAINMENT I

Beowulf 3D: a case study [6803-25]

R. Engle

Color management and color perception issues in a virtual reality theater [6803-26]

D. Gadia, C. Bonanomi, M. Rossi, A. Rizzi, D. Marini

Dimensionalization: converting 2D films to 3D [6803-27]

A. Van Pernis, M. DeJohn

Original and creative stereoscopic film making [6803-28]

E. Criado

A systematized WYSIWYG pipeline for digital stereoscopic 3D filmmaking [6803-29]

R. Mueller, C. Ward, M. Hušák

DIGITAL 3D STEREOSCOPIC ENTERTAINMENT II

Digital stereoscopic cinema: the 21st century [6803-30]

L. Lipton

The compatibility of consumer plasma displays with time-sequential stereoscopic 3D visualization [6803-31]

A. Woods, K. Karvinen

The hybrid theatre [6803-32]

R. Gillen

Development of 3D video and 3D data services for T-DMB [6803-33]

K. Yun, H. Lee, N. Hur, J. Kim

Toward 3D-IPTV: design and implementation of a stereoscopic and multiple-perspective video streaming system [6803-34]

G. Petrovic, D. Farin, P. de With

MEDICAL APPLICATIONS OF STEREOSCOPY

A composition tool for creating comfortable stereoscopic images [6803-35]

K. Quintus, M. Halle

Radiation therapy planning using a volumetric 3D display: PerspectaRAD [6803-36]

J. Napoli, S. Stutsman, J. Chu, X. Gong, M. Rivard, G. Cardarelli, T. Ryan, G. Favalora

Teaching microsurgery to undergraduate medical students by means of high-definition stereo video microscopy: the Aachen skills lab experience [6803-37]

J. Ilgner, J. Park, M. Westhofen

STEREOSCOPIC DISPLAY APPLICATIONS

Interactive stereoscopic viewer for cultural heritage [6803-38]

N. Abe, T. Kawai, M. Kawaguchi, M. Ando

Stereo images from space [6803-39]

M. Sabbatini, M. Collon, G. Visentin

INTEGRAL 3D IMAGING

Improvements of 3-D image quality in integral display by reducing distortion errors [6803-41]

M. Kawakita, H. Sasaki, J. Arai, F. Okano, K. Suehiro, Y. Haino, M. Yoshimura, M. Sato

Formulation of coarse integral imaging and its applications [6803-42]

H. Takeya

Integral 3D TV using ultrahigh-definition D-ILA device [6803-43]

K. Suehiro, M. Yoshimura, Y. Haino, M. Sato, J. Arai, M. Kawakita, F. Okano

Integral videography display with field sequential LCD [6803-44]

T. Koike, M. Oikawa, M. Kobayashi

Adaptive integral photography imaging with variable-focus lens array [6803-45]

K. Ueda, T. Koike, K. Takahashi, T. Naemura

INTERACTIVE PAPER SESSION

Moving up to high-resolution (dual 1920x1080): acquiring and visualizing stereoscopic noncompressed images in real-time for dentists and medical applications [6803-46]

R. Galli

3-D visualization of electrostatic fields on a helicopter in flight [6803-47]

J. Dammann, D. Hull

Programming standards for effective S-3D game development [6803-48]

N. Schneider, A. Matveev

Disparity manipulation for stereo images and video [6803-49]

C. Wang, A. Sawchuk

Study of a viewer tracking system with multiview 3D display [6803-50]

J.-C. Yang, C.-S. Wu, C.-H. Hsiao, M.-C. Yang, W.-C. Liu, Y. Hung

Ghosting reduction method for color anaglyphs [6803-52]

A. Chang, H. Kim, J. Choi, K. Yu

A method of fabricating micro-retarder plates by a laser system [6803-54]

L. Lin, Y.-C. Chen, C.-H. Tsai, K. Lee

Extraction of digital elevation map from parallel-perspective stereo mosaics [6803-56]

P. Gurram, E. Saber, H. Rhody

Robust image, depth, and occlusion generation from uncalibrated stereo [6803-57]

B. Barenbrug, R. Berretty, R. Klein Gunnewiek

Integral photography using hexagonal fly's eye lens and fractional view [6803-58]

K. Yanaka

Integral imaging with reduced color moire pattern by using a slanted lens array [6803-59]

Y. Kim, G. Park, S.-W. Cho, J. Jung, B. Lee, Y. Choi, M.-G. Lee

Flatbed-type omnidirectional three-dimensional display system using holographic lens array [6803-60]

H. Takahashi, M. Chikayama, K. Yamada

Stereoscopic see-through retinal projection head-mounted display [6803-61]

H. Takahashi, S. Hirooka

3D display using motion parallax for long-depth expression [6803-62]

K. Uehira, M. Suzuki

Interactive tools for image-based stereoscopic artwork [6803-63]

E. Stavrakis, M. Gelautz

Toward a stereoscopic encoder/decoder for digital cinema [6803-64]

R. Bensalma, M. Larabi

Volume 6804: The Engineering Reality of Virtual Reality 2008

Editors: Ian E. McDowall, Margaret Dolinsky

Preface

VIRTUAL PATHOLOGY AND VR MEDICINE

Enhancing the immersive reality of virtual simulators for easily accessible laparoscopic surgical training [6804-1]

K. McKenna, K. McMenemy, R. Ferguson, A. Dick, S. Potts

A usability assessment on a virtual reality system for panic disorder treatment [6804-2]

J. Lee, T. Kawai, N. Yoshida, S. Izawa, S. Nomura, D. Eames, H. Kaiya

An enquiry into VR interface design for medical training: VR augmented anatomy tutorials for breast cancer [6804-3]

V. Charissis, B. Ward, M. Naef, D. Rowley, L. Brady, P. Anderson

Effects of stereoscopic displays and interaction devices on human motor behavior [6804-4]

S.-C. Yeh, B. Lange, C. Chang, C. Wang, A. Sawchuk, A. Rizzo

ARTISTS ON ART, MUSIC, AND VR

Virtual reality and hallucination: a technoetic perspective [6804-8]

D. Slattery

Ontological implications of being in immersive virtual environments [6804-9]

J. Morie

INDUSTRIAL SESSIONS: VR DESIGN

[Spatial augmented reality on industrial CNC-machines \[6804-11\]](#)

A. Olwal, J. Gustafsson, C. Lindfors

[Voluble: a space-time diagram of the solar system \[6804-13\]](#)

J. Aguilera, M. SubbaRao

[Stereoscopic volumetric workstation collaboration and telepresence for remote repair applications \[6804-14\]](#)

C. Kornfeld

SCIENTIFIC REASONING: I THINK, THEREFORE, I VR

[A new method for combining live action and computer graphics in stereoscopic 3D \[6804-15\]](#)

J. Rupkalvis, R. Gillen

[Interaction using nearby-and-far projection surfaces with a body-worn ProCam system \[6804-16\]](#)

T. Kurata, N. Sakata, M. Kourogi, T. Okuma, Y. Ohta

[Internet virtual studio: low-cost augmented reality system for WebTV \[6804-17\]](#)

R. Sitnik, S. Pasko, M. Karaszewski, M. Witkowski

[Accurate camera calibration method specialized for virtual studios \[6804-18\]](#)

H. Okubo, Y. Yamanouchi, H. Mitsumine, T. Fukaya, S. Inoue

[A transportable and easily configurable multi-projector display system for distributed virtual reality applications \[6804-19\]](#)

H. Grimes, K. McMenemy, R. Ferguson

Volume 7237: Stereoscopic Displays and Applications XX (2009)

Editors: Andrew J. Woods, Nicolas S. Holliman, John O. Merritt

Preface

APPLICATIONS OF STEREOSCOPY

[From bench to bedside: stereoscopic imaging in experimental and clinical otology \[7237-1\]](#)

J. Ilgner, S. Biedron, M. Bovi, E. Fadeeva, M. Westhofen

[Stereoscopic display technologies, interaction paradigms, and rendering approaches for neurosurgical visualization \[7237-2\]](#)

J. Cooperstock, G. Wang

[Case study: using a stereoscopic display for mission planning \[7237-3\]](#)

M. Kleiber, C. Winkelholz

[3D vision system assessment \[7237-4\]](#)

J. Pezzaniti, R. Edmondson, J. Vaden, B. Hyatt, D. Chenault, D. Kingston, V. Geulen, S. Newell, B. Pettijohn

[Autostereoscopic display of large-scale scientific visualization \[7237-5\]](#)

T. Peterka, R. Ross, H. Yu, K.-L. Ma, R. Kooima, J. Girado

MULTIVIEW AND LIGHTFIELD TECHNOLOGIES

[Spatial-angular analysis of displays for reproduction of light fields \[7237-6\]](#)

A. Said, E. Talvala

[Flat panel display with slanted pixel arrangement for 16-view display \[7237-7\]](#)

Y. Takaki, O. Yokoyama, G. Hamagishi

High-density light field reproduction using overlaid multiple projection images [7237-8]

M. Yamasaki, H. Sakai, K. Utsugi, T. Koike

Calibrating camera and projector arrays for immersive 3D display [7237-9]

H. Baker, Z. Li, C. Papadas

DIGITAL 3D STEREOSCOPIC ENTERTAINMENT I

Three-dimensional television: a broadcaster's perspective [7237-11]

S. Jolly, M. Armstrong, R. Salmon

Stereoscopic CG camera rigs and associated metadata for cinematic production [7237-114]

S. Sylwan, D. MacDonald, J. Walter

A modular projection autostereoscopic system for stereo cinema [7237-67]

V. Elkhov, N. Kondratiev, Y. Ovechkis, L. Pautova

Digital stereoscopic convergence where video games and movies for the home user meet [7237-14]

E. Schur

DIGITAL 3D STEREOSCOPIC ENTERTAINMENT II

Bolt 3D: a case study [7237-115]

R. Neuman

Optimizing 3D image quality and performance for stereoscopic gaming [7237-17]

J. Flack, H. Sanderson, S. Pegg, S. Kwok, D. Paterson

Evaluating methods for controlling depth perception in stereoscopic cinematography [7237-18]

G. Sun, N. Holliman

Publishing stereoscopic images [7237-19]

R. Labbe, D. Klutho

STEREOSCOPIC HUMAN FACTORS

Measuring visual discomfort associated with 3D displays [7237-21]

M. Lambooj, M. Fortuin, W. Ijsselsteijn, I. Heynderickx

Evaluation of stereoscopic 3D displays for image analysis tasks [7237-22]

E. Peinsipp-Byma, N. Rehfeld, R. Eck

Binocular coordination in response to stereoscopic stimuli [7237-23]

S. Liversedge, N. Holliman, H. Blythe

3D DISPLAYS

The compatibility of LCD TVs with time-sequential stereoscopic 3D visualization [7237-24]

A. Woods, A. Sehic

Color holographic reconstruction using multiple SLMs and LED illumination [7237-25]

F. Yaras, L. Onural

Review of wire grid polarizer and retarder for stereoscopic display [7237-26]

S. Lee, M. Kim, K. Lee, K. Park

Using mental rotation to evaluate the benefits of stereoscopic displays [7237-92]

Y. Aitsiselmi, N. Holliman

Stereo display with time-multiplexed focal adjustment [7237-28]

D. Hoffman, P. Hands, A. Kirby, G. Love, M. Banks

AUTOSTEREOSCOPIC DISPLAYS

Large real-time holographic displays: from prototypes to a consumer product [7237-29]

R. Häussler, S. Reichelt, N. Leister, E. Zschau, R. Missbach, A. Schwerdtner

High-definition integral floating display with multiple spatial light modulators [7237-30]

J. Kim, K. Hong, J.-H. Jung, G. Park, J. Lim, Y. Kim, J. Hahn, S.-W. Min, B. Lee

OLED backlight for autostereoscopic displays [7237-31]

U. Vogel, L. Kroker, K. Seidl, J. Knobbe, C. Grillberger, J. Amelung, M. Scholles

Autostereoscopic projector and display screens [7237-33]

S. Zacharovas, R. Bakanas, E. Kuchin

STEREOSCOPIC DEVELOPMENTS I

Effect of light ray overlap between neighboring parallax images in autostereoscopic 3D displays [7237-34]

R. Fukushima, K. Taira, T. Saishu, Y. Momonoi, M. Kashiwagi, Y. Hirayama

Shutter glasses stereo LCD with a dynamic backlight [7237-35]

J.-C. Liou, K. Lee, F.-G. Tseng, J.-F. Huang, W.-T. Yen, W.-L. Hsu

3D IMAGE PROCESSING AND IMAGE QUALITY

A new way to characterize autostereoscopic 3D displays using Fourier optics instrument [7237-37]

P. Boher, T. Leroux, T. Bignon, V. Collomb-Patton

Effects of sampling on depth control in integral imaging [7237-38]

J. Arai, M. Kawakita, F. Okano

Compressed stereoscopic video quality metric [7237-40]

J. Seo, D. Kim, K. Sohn

Coherent spatial and temporal occlusion generation [7237-54]

R. Klein Gunnewiek, R. Berretty, B. Barenbrug, J. Magalhães

STEREOSCOPIC DEVELOPMENTS II

Stereoscopy in cinematographic synthetic imagery [7237-42]

J. Eisenmann, R. Parent

Compressive acquisition of ray-space using radon transform [7237-43]

K. Yamashita, T. Yendo, M. Tanimoto, T. Fujii

The effect of 2D/3D environment on decision making confidence in visual perceptual tasks [7237-44]

S. Negry, M. First

Experiments on shape perception in stereoscopic displays [7237-45]

L. Leroy, P. Fuchs, A. Paljic, G. Moreau

Depth and distance perception in a curved large screen virtual reality installation [7237-46]

D. Gadia, A. Galmonte, T. Agostini, A. Viale, D. Marini

2D TO 3D CONVERSION

Depth map quality metric for three-dimensional video [7237-47]

D. Kim, D. Min, J. Oh, S. Jeon, K. Sohn

Three-dimensional TV: a novel method for generating surrogate depth maps using colour information [7237-48]

W. Tam, C. Vázquez, F. Speranza

Unsupervised object segmentation for 2D to 3D conversion [7237-49]

M. Kunter, S. Knorr, A. Krutz, T. Sikora

3D ON MOBILE DEVICES

Digital stereoscopic photography using StereoData Maker [7237-50]

J. Toeppen, D. Sykes

Stereoscopic contents authoring system for 3D DMB data service [7237-51]

B. Lee, K. Yun, N. Hur, J. Kim, S. Lee

Evaluation of stereoscopic image quality for mobile devices using interpretation based quality methodology [7237-52]

T. Shibata, S. Kurihara, T. Kawai, T. Takahashi, T. Shimizu, R. Kawada, A. Ito, J. Häkkinen, J. Takatalo, G. Nyman

Classification and simulation of stereoscopic artifacts in mobile 3DTV content [7237-53]

A. Boev, D. Hollosi, A. Gotchev, K. Egiazarian

DEPTH MAP TECHNIQUES

Declipse 2: multi-layer image and depth with transparency made practical [7237-41]

B. Barenbrug

Efficient and automatic stereoscopic videos to N views conversion for autostereoscopic displays [7237-55]

D. Alessandrini, R. Balter, S. Pateux

Depth camera for 3DTV applications [7237-84]

J. Kim, T. Kim, W.-J. Kim, N. Hur

INTERACTIVE PAPER SESSION

Application of stereoscopic arc photogrammetry to image-guided radiation therapy and treatment planning [7237-57]

C. Brack, I. Kessel, L. French, J. Clewlow, M. Wolski

Temporal sub-sampling of depth maps in depth image-based rendering of stereoscopic image sequences [7237-58]

W. Tam, F. Speranza, C. Vázquez, L. Zhang

Indirect ophthalmoscopic stereo video system using three-dimensional LCD [7237-59]

H.-J. Kong, J. Seo, J. Hwang, H. Kim

Stereoscopic camera system with creator-friendly functions [7237-60]

S. Kishi, N. Abe, T. Shibata, T. Kawai, M. Maeda, K. Hoshi

The development of the integrated-screen autostereoscopic display system [7237-62]

W.-L. Hsu, W.-L. Chen, C.-H. Tsai, C.-L. Wang, C.-S. Wu, Y.-C. Chen, S.-C. Cheng

A method for evaluating motion sickness induced by watching stereoscopic images on a head-mounted display [7237-63]

H. Takada, K. Fujikake, T. Watanabe, S. Hasegawa, M. Omori, M. Miyao

Dense light field microscopy [7237-65]

Y.-T. Lim, J.-H. Park, N. Kim, K.-C. Kwon

A common interface for stereo viewing in various environments [7237-66]

O. Pariser, R. Deen

Resizing of stereoscopic images for display adaptation [7237-71]

W.-J. Kim, S.-D. Kim, J. Kim, N. Hur

[Super multi-view display with 128 viewpoints and viewpoint formation \[7237-72\]](#)

Y. Takaki

[A novel 2D-to-3D conversion technique based on relative height-depth cue \[7237-73\]](#)

Y. Jung, A. Baik, J. Kim, D. Park

[3D and 2D switchable display \[7237-74\]](#)

M. Nagashima

[SOLIDFELIX: a transportable 3D static volume display \[7237-75\]](#)

K. Langhans, A. Kreft, H. Wörden

[High speed large viewing angle shutters for triple-flash active glasses \[7237-77\]](#)

B. Caillaud, B. Bellini, J. de Bougrenet de la Tocnaye

[Spatial-coding-based 2D/3D/P-P display \[7237-78\]](#)

H. Yamamoto, S. Suyama

[A wavelet-based quadtree driven stereo image coding \[7237-79\]](#)

R. Bensalma, M. Larabi

[All in focus plane reconstruction based on integral imaging \[7237-82\]](#)

G. Baasantseren, J.-H. Park, N. Kim

[Hybrid depth cueing for 2D-to-3D conversion system \[7237-85\]](#)

C.-C. Cheng, C.-T. Li, Y.-M. Tsai, L.-G. Chen

[Optically multilayered light field display for enhancing depth of field \[7237-86\]](#)

T. Wada, T. Koike, T. Naemura

[Real-time rendering for integral photography that uses extended fractional view \[7237-87\]](#)

K. Yanaka

[High-speed liquid-crystal optical deflector for 3D display \[7237-88\]](#)

S. Wakita, Y. Sumitomo, Y. Kobayashi

[The variance estimation and enhanced 3D sensing of heavily occluded objects using synthetic aperture integral imaging \(SAII\) \[7237-89\]](#)

Y. Hwang, E.-S. Kim

[Improving image quality of coarse integral volumetric display \[7237-90\]](#)

H. Kakeya

Volume 7238: The Engineering Reality of Virtual Reality 2009

Editors: Ian E. McDowall, Margaret Dolinsky

Preface

DELIGHTFUL DEVICES AND AUGMENTING REALITY

[Model-based registration of multi-rigid-body for augmented reality \[7238-1\]](#)

S. Ikeda, H. Hori, M. Imura, Y. Manabe, K. Chihara

[Automatic human detecting and tracking using stereo vision technique \[7238-2\]](#)

Y. Wang, G. Morrison

[Real-time geometric registration using feature landmark database for augmented reality applications \[7238-3\]](#)

T. Taketomi, T. Sato, N. Yokoya

EVOKING ENVIRONMENTS THROUGH ARTFUL DISTINCTIVENESS

A strategic map for high-impact virtual experience design [7238-5]

H. Faste, M. Bergamasco

Computer graphics synthesis for inferring artist studio practice: an application to Diego Velázquez's Las Meninas [7238-6]

D. Stork, Y. Furuichi

Becoming Dragon: a mixed reality durational performance in Second Life [7238-7]

M. Cárdenas, C. Head, T. Margolis, K. Greco

Dots and dashes: art, virtual reality, and the telegraph [7238-8]

S. Ruzanka, B. Chang

FEELING AWARE: VR AS EXPERIENCE

Re-entry: online virtual worlds as a healing space for veterans [7238-12]

J. Morie

DJ Sim: a virtual reality DJ simulation game [7238-13]

K. Tang, M. Loke, C. Chin, G. Chua, J. Chong, C. Manders, I. Khan, M. Yuan, F. Farbiz

INTERACTIVE SCIENCE AND VIRTUAL OBSERVATION

Interactive exploration of coastal restoration modeling in virtual environments [7238-15]

A. Gerndt, R. Miller, S. Su, E. Meselhe, C. Cruz-Neira

Forensic aerial photography: projected 3-D exhibits facilitating rapid environmental justice [7238-16]

R. Pope

Virtual hydrology observatory: an immersive visualization of hydrology modeling [7238-17]

S. Su, C. Cruz-Neira, E. Habib, A. Gerndt

Sensate abstraction: hybrid strategies for multi-dimensional data in expressive virtual reality contexts [7238-18]

R. West, J. Gossmann, T. Margolis, J. Schulze, J. Lewis, B. Hackbarth, I. Mostafavi