

2009 3DTV-Conference: The True Vision – Capture, Transmission and Display of 3D Video

(3DTV-CON 2009)

**Potsdam, Germany
4 – 6 May 2009**



**IEEE Catalog Number: CFP0955B-PRT
ISBN: 978-1-4244-4317-8**

TABLE OF CONTENTS

Fast Approximate Focal Stack Transform	1
<i>J.G. Marichal-Hernandez, J.P. Luke, F. Rosa, F. Perez Nava, J.M. Rodriguez-Ramos</i>	
Optimal Pixel Aspect Ratio for Stereoscopic 3D Displays under Practical Viewing Conditions	5
<i>H. Azari, I. Cheng, A. Basu</i>	
Objective Quality Assessment Method of Stereo Images	9
<i>J. Yang, C. Hou, Y. Zhou, Z. Zhang, J. Guo</i>	
Question Interface for 3D Picture Creation on an Autostereoscopic Digital Picture Frame	13
<i>C. Varekamp, P. Vandewalle, M. De Putter</i>	
Horizontal Parallax Distortion Correction Method in Toed-in Camera with Wide-angle Lens	17
<i>W. Kang, S. Lee</i>	
3D Holographic Display with Optically Addressed Spatial Light Modulator	21
<i>X. Liang, X. Xu, S. Sanjeev, Y. Pan, R.B.A. Tanjung, C. Tan, B. Xu, C.T. Chong</i>	
Objective Quality Assessment of Depth Image Based Rendering in 3DTV System	25
<i>H. Shao, X. Cao, G. Er</i>	
Real-time 3D Video Synthesis from Binocular Capture System Based on Commodity Graphic Hardware	29
<i>Z. Liao, X. Xie, Q. Dai</i>	
Single Iteration View Interpolation for Multiview Video Applications	33
<i>P. Tsung, P. Lin, L. Ding, S. Chien, L. Chen</i>	
An Efficient 2D to 3D Video Conversion Method Based on Skeleton Line Tracking	37
<i>Z. Li, X. Xie, X. Liu</i>	
Automatic Player's View Generation of Real Soccer Scenes Based on Trajectory Tracking	41
<i>N. Kasuya, I. Kitahara, Y. Kameda, Y. Ohta</i>	
Generation of 3D-TV LDV-Content with Time of Flight Camera	45
<i>A. Frick, F. Kellner, B. Bartczak, R. Koch</i>	
Accurate 3D Reconstruction Via Surface-consistency	49
<i>C. Wu, X. Cao, Q. Dai</i>	
IGLANCE: Transmission to Medical High Definition Autostereoscopic Displays	53
<i>D. Ruijters, S. Zinger</i>	
Quality Improving Techniques in DIBR for Free-viewpoint Video	57
<i>L. Do, S. Zinger, Y. Morvan, P.H.N De With</i>	
Integrating 3D Point Clouds with Multi-viewpoint Video	61
<i>F. Chen, I. Cheng, A. Basu</i>	
Mixed Resolution Coding of Stereoscopic Video for Mobile Devices	65
<i>H. Brust, A. Smolic, K. Mueller, G. Tech, T. Wiegand</i>	
Quality Assessment of 3D Asymmetric View Coding Using Spatial Frequency Dominance Model	69
<i>F. Lu, H. Wang, X. Ji, G. Er</i>	

Multiview Plus Depth Scalable Coding in the Depth Domain	73
<i>L.S. Karlsson, M. Sjostrom</i>	
Rate-distortion Optimized H.264/MVC Video Communications Over QoS-Enabled Networks	77
<i>A. Fiandrotti, E. Masala, J.C. De Martin</i>	
Depth Map Recovery for Multi-View Using Belief Propagation	81
<i>T. Li, X. Ji, Q. Dai</i>	
Depth Range of a 3D Image Sampled by a Lens Array with the Integral Method	85
<i>F. Okano, J. Arai, M. Kawakita</i>	
A Omni-directional Inter-Camer Color Calibration	89
<i>Z. Li, X. Ji, Q. Dai</i>	
Temporally Consistent Dense Depth Map Estimation Via Belief Propagation	93
<i>C. Cigla, A.A. Alatan</i>	
Image-based Three-dimensional Free Viewpoint Video Synthesis	97
<i>D. Aliprandi, E. Piccinelli</i>	
Accurate Multi-view Depth Reconstruction with Occlusions Handling	101
<i>C. Niquin, S. Prevost, Y. Remion</i>	
Free-View TV Watermark Selection Based on the Distribution Characteristics	105
<i>E.E. Apostolidis, G.A. Triantafyllidis</i>	
Multi-view Stereo Using Multi-luminance Images	109
<i>X. Feng, Y. Liu, Q. Dai</i>	
Vertex Partitioning Based Multiple Description Coding of 3D Dynamic Meshes	113
<i>M. Oguz Bici, N. Stefanoski, G.B. Akar</i>	
3D Content Generation for Autostereoscopic Displays	117
<i>K. Dimitropoulos, T. Semertzidis, N. Grammalidis</i>	
3DTV Rendering from Multiple Cameras	121
<i>A. Manta, A. Redert, E. Hendriks</i>	
Voxel Based Annealed Particle Filtering for Markerless 3D Articulated Motion Capture	125
<i>C. Canton-Ferrer, J.R. Casas, M. Pardas</i>	
A General Multiview LCD Stereo Image Composition Method Based on Optical Plate Technology	129
<i>L. Yang, X. Song, C. Hou, J. Guo, S. Li, Y. Zhou</i>	
Incremental-LDI for Multi-view Coding	133
<i>V. Jantet, L. Morin, C. Guillemot</i>	
Compact Quad-based Representation for 3D Video	137
<i>T. Collet, L. Morin, C. Labit, S. Pateux, R. Balter</i>	
Stereo Video Compression for Mobile 3D Services	141
<i>P. Merkle, H. Brust, K. Dix, K. Muller, T. Wiegand</i>	
Video Plus Depth Compression for Mobile 3D Services	145
<i>P. Merkle, Y. Wang, K. Muller, A. Smolic, T. Wiegand</i>	
Remote and Collaborative 3D Interactions	149
<i>B. Petit, J. Lesage, E. Boyer, J. Franco, B. Raffin</i>	
Experimental Investigation of Holographic 3D-TV Approach	153
<i>M. Agour, T. Kreis</i>	

Input System for Moving Integral Imaging Using Full HD Camcorder and Fly's Eye Lens	157
<i>K. Yanaka, H. Moteji</i>	
Low Cost Multi-view Video System for Wireless Channel.....	161
<i>N.A. Manap, G. Di Caterina, J. Soraghan</i>	
A 3D Avatar Modeling of Real World Objects Using a Depth Camera	165
<i>J. Cho, H.S. Kim, K.H. Lee</i>	
Real-time Free-Viewpoint Viewer from Multiview Video Plus Depth Representation Coded by H.264/AVC MVC Extension	169
<i>S. Shimizu, H. Kimata, Y.Ohtani</i>	
Real-time Transmission of High-resolution Multi-view Stereo Video Over IP Networks.....	173
<i>Y. Zhou, C. Hou, Z. Jin, L. Yang, J. Yang, J. Guo</i>	
An Improved Multiview Stereo Video FGS Scalable Scheme	177
<i>L. Yang, X. Song, C. Hou, J. Guo, S. Li, Y. Zhou</i>	
Migrating Real-time Depth Image-based Rendering from Traditional to Next-Gen GPGPU.....	181
<i>S. Rogmans, M. Dumont, G. Lafruit, P. Bekaert</i>	
Real-time Color Holographic Video Display System	185
<i>F. Yaras, H. Kang, L. Onural</i>	
Quality Comparison and Acceleration for Digital Hologram Generation Method Based on Segmentation	189
<i>H. Kang, F. Yaras, L. Onural</i>	
Distortions of Synthesized Views Caused by Compression of Views and Depth Maps.....	193
<i>K. Klimaszewski, K. Wegner, M. Domanski</i>	
Interactive Free Viewpoint Video from Multiple Stereo	197
<i>C. Weigel, S. Schwarz, T. Korn, M. Wallebohr</i>	
Evaluation of Stereo Video Coding Schemes for Mobile Devices	201
<i>A. Aksay, G.B. Akar</i>	
Random Hole Display: A Non-uniform Barrier Autostereoscopic Display	205
<i>A. Nashel, H. Fuchs</i>	
Monitoring Large Volumes of Interest by Using Voxel Visibility.....	209
<i>D. Ruiz, K. Hagihara, B. Macq</i>	
Optimization and Comparison of Coding Algorithms for Mobile 3DTV.....	213
<i>G. Tech, A. Smolic, H. Brust, P. Merkle, K. Dix, Y. Wang, K. Muller, T. Wiegand</i>	
Compression of Depth Information for 3D Rendering	217
<i>P. Zanuttigh, G.M. Cortelazzo</i>	
Similarity Measures for Depth Estimation	221
<i>K. Wegner, O. Stankiewicz</i>	
The DABR- A Multitouch System for Intuitive 3D Scene Navigation.....	225
<i>J. Edelmann, A. Schilling, S. Fleck</i>	
Fast Gradient-based Mesh Generation Method for the Stereo Image Representation.....	229
<i>I. Park, H. Byun</i>	
Field of View Expansion for 3-D Holographic Display Using a Single Spatial Light Modulator with Scanning Reconstruction Light	233
<i>R.H.Y. Chen, T.D. Wilkinson</i>	

Increased Accuracy Orientation Estimation from Omnidirectional Images Using the Spherical Fourier Transform	237
<i>T. Schairer, B. Huhle, W. Staßer</i>	
Simultaneous Estimation of Super-resolved Depth and All-in-Focus Images from a Plenoptic Camera	241
<i>F. Perez Nava, J.P. Luke</i>	
Cross-Talk Measurement for 3D Displays	245
<i>V. Skala</i>	
Registration of Depth and Video Data in Depth Image Based Rendering	249
<i>M. Fieseler, X. Jiang</i>	
Accelerated Multi-view Stereo Using Parallel Processing Capabilities of the GPUs	253
<i>O. Moslah, A. Valles-Such, V. Guitteny, S. Couvet, S. Philipp-Foliguet</i>	
Temporally Consistent Layer Depth Ordering Via Pixel Voting for Pseudo 3D Representation	257
<i>E. Turetken, A. Aydin Alatan</i>	
Wave Field Synthesis	261
<i>K. Brandenburg, S. Brix, T. Sporer</i>	
Integration of 3D Audio and 3D Video for FTV	265
<i>M.P. Tehrani, T. Yendo, T. Fujii, K. Takeda, K. Mase, M. Tanimoto</i>	
Smart-I²: ‘Spatial Multi-user Audio-visual Real-time Interactive Interface’, A Broadcast Application Context	269
<i>M. Rebillat, B.F.G. Katz, E. Corteel</i>	
A Novel 3D Audio Display System using Radiated Loudspeaker for Future 3D Multimodal Communications	273
<i>M. Katsumoto, Y. Yamakata, T. Kimura</i>	
Multisensory Integration of a Sound with Stereo 3-D Visual Events	277
<i>K. Sakurai, P.M. Grove</i>	
Multimodal Interaction of Auditory Spatial CUEs and Passive Observer Movement in Simulated Self Motion	281
<i>W.L. Martens, S. Sakamoto, Y. Suzuki</i>	
Author Index	