

Sunday, April 10

10:30 - 11:00 Coffee/Tea

11:00 - 11:30 Opening Session *Torsten Kuhlen*

11:30 - 12:30 Session 1 - Image Processing *Chair: Daniel Coming*

- Optimal Multi-Image Processing Streaming Framework on Parallel Heterogeneous Systems
Linh K. Ha, Jens Krüger, Joao Comba, Sarang Joshi, Cláudio T. Silva
- Parallel Gradient Domain Processing of Massive Images
Sujin Philip, Brian Summa, Peer-Timo Bremer, Valerio Pascucci

12:30 - 13:30 Lunch

13:30 - 15:30 Session 2 - Rendering *Chair: Kurt Debattista*

- Distributed OpenGL Rendering in Network Bandwidth Constrained Environments
Braden Neal, Paul Hunkin, Anthony McGregor
- Revisiting Parallel Rendering for Shared Memory Machines
Boonthanome Nouanesengsy, James Ahrens, Jonathan Woodring, Han-Wei Shen
- Cross-Segment Load Balancing in Parallel Rendering
Fatih Erol, Stefan Eilemann, Renato Pajarola
- Load Balancing Utilizing Data Redundancy in Distributed Volume Rendering
Steffen Frey, Thomas Ertl

15:30 - 16:00 Coffee Break

16:00 - 17:00 Session 3 - Invited Talk *Chair: Jean M. Favre*

- Exascale Visualization: Get Ready for a new World
Hank Childs

Exascale computing is on the horizon, and may appear as soon as 2018. So what does this mean for visualization? Plenty. Exascale machines will place severe constraints on I/O, power, data movement, and architecture. The massive data sets produced by these machines will likely require a variety of techniques to be visualized, such as in situ processing, multi-resolution processing, and/or data reduction, all while running on an accelerator. In this talk, Hank will describe the exascale landscape and discuss why and how visualization will look different.



Hank Childs is the architect of the VisIt project, a popular program that has been scaled to tens of thousands of cores and processed meshes with trillions of cells per time slice, but also is used by thousands for their day-to-day visualization and analysis needs. He is a computer systems engineer at Lawrence Berkeley Lab and a professional researcher at UC Davis, where he received his PhD in 2006. Hank previously was at Lawrence Livermore Lab for ten years, where he was part of the original VisIt development team. He is the Chief Software Architect (CSWA) of VACET, the US Department of Energy SciDAC center for visualization and analysis and the CSWA of the NSF Longhorn/XD visualization center.

19:00 - 22:00

Symposium Dinner at the Bengal Dynasty

Monday, April 11

09:30 - 10:30 Session 4 - Tracing Rays and Particles *Chair: Filip Sadlo*

- Real-Time Ray Tracer for Visualizing Massive Models on a Cluster
Thiago Ize, Carson Brownlee, Charles D. Hansen
- Interactive Particle Tracing in Time-Varying Tetrahedral Grids
Michael Bußler, Tobias Rick, Andreas Kelle-Emden, Bernd Hentschel, Torsten Kuhlen

10:30 - 11:00 Coffee Break

11:00 - 13:00 Session 5 - Visualization *Chair: Hank Childs*

- Efficient I/O for Parallel Visualization
Thomas Fogal, Jens Krüger
- Parallel Computational Steering and Analysis for HPC Applications using a ParaView Interface and the HDF5 DSM Virtual File Driver
John Biddiscombe, Jerome Soumagne, Guillaume Oger, David Guibert, Jean-Guillaume Piccinalli
- Parallel In Situ Coupling of Simulation with a Fully Featured Visualization System
Brad Whitlock, Jean M. Favre, Jeremy S. Meredith
- A Preview and Exploratory Technique for Large-Scale Scientific Simulations
Anna Tikhonova, Hongfeng Yu, Carlos D. Correa, Jacqueline H. Chen, Kwan-Liu Ma

13:00 - 14:00 Lunch

14:00 - 15:00 Session 6 - Geometry *Chair: Renato Pajarola*

- GPU Algorithms for Diamond-based Multiresolution Terrain Processing
M. Adil Yalçın, Kenneth Weiss, Leila De Floriani
- Data-Parallel Mesh Connected Components Labeling and Analysis
Cyrus Harrison, Hank Childs, Kelly P. Gaither

15:00 - 15:30 Closing Session & Paper Award *Renato Pajarola, Torsten Kuhlen*

15:30 - 16:00 Coffee/Tea