Tuesday, June 21, 2016

Exascale Architectures: Disruptions, Denials & Directions
June 21, 2016, 08:30 am - 10:00 am
10:00 am - 11:00 am Coffee Break
Panorama 1, Forum

To Get the Highest Price/Performance/Watt... It's All about the Memory
08:30 am - 09:00 am
Steve Pawlowski, Micron

09:00 am - 09:30 am
Prof. Dr. John Goodacre, University of Manchester

Computing in 2030  Intel’s View through the Crystal Ball
09:30 am - 10:00 am
Al Gara, Intel

Connected & Autonomous Vehicles: Driving with Data & Analytics
June 21, 2016, 08:30 am - 10:00 am
10:00 am - 11:00 am Coffee Break
Panorama 2, Forum

Introduction
08:30 am - 08:35 am
Andreas Mai, Cisco

The Car of the Future: The Most Powerful Computer You Will Ever Own
08:35 am - 08:55 am
Carlo Nardone, NVIDIA

Connected Vehicle Analytics: Enabling New Business Models & Innovation
08:55 am - 09:15 am
Norm Marks, SAS

Holistic Connectivity  The Vehicle as a Part of the Internet
09:15 am - 09:35 am
Alexander Klotz, Continental

Big Data or Big Databases? The Octo Way
09:35 am - 09:55 am
Daniele Tortora, Octo Telematics

Questions & Answers
09:55 am - 10:00 am

IDC Research on HPC Use
June 21, 2016, 08:30 am - 09:15 am
Panorama 3 INDUSTRY TRACK, Forum
Kevin Monroe, IDC
Steve Conway, IDC
Research Posters - Award & Presentations

June 21, 2016, 08:30 am - 10:00 am
10:00 am - 11:00 am Coffee Break
Analog 1+2, Forum

Welcome & Research Poster Award Ceremony
08:30 am - 08:40 am
Prof. Dr. Vladimir Voevodin, MSU

ISC 2016 Award Winning Research Poster Presentation
08:40 am - 08:55 am
Dr. Julian Kunkel, DKRZ

(01) Infrastructure for Evaluating Emerging Multi-Level, Heterogeneous Memory Systems
08:55 am - 10:00 am
Dr. Edgar A. León, LLNL

(02) Solving Communication-Intensive Problems Efficiently Using On-Chip Mesh Interconnection Networks
08:55 am - 10:00 am
Sebastian Klaassen, University of Vienna

08:55 am - 10:00 am
Dr. Julian Kunkel, DKRZ

(04) Some Experimental Results on the Performance of Intel MKL Sparse Matrix-Vector Multiplication on Intel Multicore & the Xeon Phi
08:55 am - 10:00 am
Prof. Dr. Walid Abu-Sufah, University of Illinois at Urbana-Champaign

(05) The AlgoWiki Project: An Open Encyclopedia of Parallel Algorithmic Features
08:55 am - 10:00 am
Dr. Alexander Antonov, MSU

(06) Data Merging for the Cultural Heritage Imaging Based on Chebfun Approach
08:55 am - 10:00 am
Mariem El Afrit, UPMC

(07) Acceleration of Ultrasound Wave Propagation Using a Cluster of GPUs
08:55 am - 10:00 am
Filip Vaverka, Brno University of Technology

(08) Predicting I/O Performance in HPC Using Artificial Neural Networks
08:55 am - 10:00 am
Jan Fabian Schmid, University of Hamburg

(09) Performance & Scalability Evaluation of Particle-in-Cell Code PICADOR on CPUs & Intel Xeon Phi Coprocessors
08:55 am - 10:00 am
Dr. Iosif Meyerov, Lobachevsky State University of Nizhni Novgorod

(10) Use of Coprocessors of Various Types for Solving Global Optimization Problems
08:55 am - 10:00 am
Vladislav Sovrasov, Lobachevsky State University of Nizhni Novgorod

(11) Open Fortran Compiler
08:55 am - 10:00 am
Craig Griffiths, Codethink

(12) High Performance Molecular Dynamics in Cloud Infrastructure with SR-IOV & GPUDirect
08:55 am - 10:00 am
Andrew Younge, Indiana University

(13) Optimization of Electron Repulsion Integral Calculation in GAMESS Quantum Chemistry Software
08:55 am - 10:00 am
Dr. Vladimir Mironov, MSU

(14) Decentralizing the Cloud for Energy-Efficiency: The Qarnot Approach
08:55 am - 10:00 am
Dr. Yanik Ngoko, Qarnot Computing

BoF 04
June 21, 2016, 08:30 am - 09:30 am
Substanz 1+2, Forum
Dr. Martin Schulz, LLNL

PhD Forum Posters, Research Posters & HPC in Asia Posters
June 21, 2016, 08:30 am - 05:15 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Foyer 0, Forum

Industrie 4.0  Smart Factory
June 21, 2016, 09:15 am - 10:00 am
10:00 am - 11:00 am Coffee Break
Panorama 3 INDUSTRY TRACK, Forum
Prof. Dr.-Ing. Thomas Bauernhansl, Fraunhofer IPA & University of Stuttgart

BoF 05
June 21, 2016, 09:30 am - 10:30 am
10:00 am - 11:00 am Coffee Break
Substanz 1+2, Forum
Dr. Frank Baetke, HPE
Charlie Carroll, Cray

Research Poster Reception
June 21, 2016, 10:00 am - 11:00 am
10:00 am - 11:00 am Coffee Break
Analog 1+2, Forum
Exhibitor Forum 02
June 21, 2016, 10:00 am - 05:20 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Booth #500, Hall 3.Via

Social Media #JustStartToday
10:00 am - 10:20 am
Kimberly McMahon, McMahon Consulting

Fujitsu: Many-Core Experience at Fujitsu
10:20 am - 10:40 am
Dr. Pierre Lagier, Fujitsu

10:40 am - 11:00 am
Axel Rosenberg, SanDisk

Bright Computing: Containers, Clouds & Combos: Emerging Delivery Models for HPC
11:00 am - 11:20 am
Martijn de Vries, Bright Computing

D-Wave Systems: Quantum Computing: The Last Frontier
11:20 am - 11:40 am
Dr. Denny Dahl, D-Wave Systems

ExaScaler/PEZY Computing: ZettaScaler-1.6, the Immersion Liquid Cooling Platform System
11:40 am - 12:00 pm
Motoaki Saito, ExaScaler

IBM: Architecting HPC Clusters for Performance
12:00 pm - 12:20 pm
Brett Newman, IBM

NVIDIA: The Expanding Role of GPUs in HPC
12:20 pm - 12:40 pm
Dr. Peter Messmer, NVIDIA

NetApp: Enterprise Grade Storage Building Blocks in the DevOps World
12:40 pm - 01:00 pm
Scott Pfeiffer, NetApp

ClusterVision: Changing the Paradigm of HPC with OpenStack
01:00 pm - 01:20 pm
Samira Mellenbergh, ClusterVision

DDN Storage: Introducing a New IO Tier for Parallel File Systems
01:20 pm - 01:40 pm
Dr. James Coomer, DDN

Intel: Fuel Your Insight with Intel® Scalable System Framework
01:40 pm - 02:00 pm
Stephan Gillich, Intel

**Samsung Semiconductor Europe: Samsung Memory Update**
02:00 pm - 02:20 pm
Thomas Arenz, Samsung

**HGST: Active Archiving with Object Storage**
02:20 pm - 02:40 pm
Heinz Esterlechner, HGST

**Adaptive Computing: Ease of Use in HPC Moab Delivers Increased User Productivity in Research & Industry**
02:40 pm - 03:00 pm
Bernhard Schott, Adaptive Computing

**SGI: HPC Matters**
03:00 pm - 03:20 pm
Dr. Eng Lim Goh, SGI

**Hewlett Packard Enterprise: An Innovative HPC & Big Data Portfolio**
03:20 pm - 03:40 pm
Sanjeet Singh, Hewlett Packard Enterprise

**Oracle: EDR InfiniBand in Large, Multi-Tenant Clusters**
03:40 pm - 04:00 pm
Ola Torudbakken, Oracle

04:00 pm - 04:20 pm
David Ingersoll, Penguin Computing

**Omnibond: 2 Projects of Interest: 1) Burst Buffer Over Object Storage Featuring the 2TIERSTM Project with EMC & 2) Complete HPC in the Cloud with CloudyCluster**
04:20 pm - 04:40 pm
Sorin Faibish, EMC
Boyd Wilson, Omnibond

**CoolIT Systems: Enabling High Density Chip-to-Atmosphere Data Center Solutions**
04:40 pm - 05:00 pm
Geoff Lyon, CoolIT Systems

**UNIVA: Use Cases For Containers in HPC**
05:00 pm - 05:20 pm
Daniel Gruber, UNIVA

**Exhibition**
June 21, 2016, 10:00 am - 06:00 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break

Exhibition Hall, Hall 3.Via
BoF 06

June 21, 2016, 10:15 am - 11:15 am
10:00 am - 11:00 am Coffee Break
Booth #220, Hall 3.Via
Dr. Toni Collis, EPCC
Carolyn Coke Reed Devany, Data Vortex Technologies
Jacqueline H. Chen, Sandia National Laboratories

Climate & Weather

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
Panorama 1, Forum

Introduction
11:00 am - 11:05 am
Prof. Dr. Thomas Ludwig, DKRZ

Making the Case for a Step Change Investment in High Performance Computing a Met Office Case Study
11:05 am - 11:30 am
Dave Underwood, Met Office

Using HPC to Predict Extreme Weather
11:30 am - 11:55 am
Dr. Peter Bauer, ECMWF

Towards Extreme-Scale Weather/Climate Simulation: The Post K Supercomputer & Our Challenges
11:55 am - 12:20 pm
Dr. Hisashi Yashiro, RIKEN AICS

Discussion
12:20 pm - 12:30 pm

Neurorobotics & Supercomputing: The Human Brain Project & Other Human & Humanoid Approaches

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
Panorama 2, Forum

Neurorobotics in the Human Brain Project
11:00 am - 11:30 am
Dr. Florian Röhrbein, TU München

Modeling the Brain from Molecular Images
11:30 am - 12:00 pm
Dr. Klaus Maier-Hein, University of Heidelberg

Designing & Modeling Cognitive Humanoids
12:00 pm - 12:30 pm
Dr.-Ing. Nikolaus Vahrenkamp, KIT

CONFERENCE PASS  EXHIBITION PASS  TUTORIAL PASS  WORKSHOP PASS

PROGRAM MAY BE SUBJECT TO CHANGES
Applications in Industrie 4.0

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch

Panorama 3 INDUSTRY TRACK, Forum

Airbus Manufacturing Challenges for Industrie 4.0
11:00 am - 11:30 am
Gerd Büttner, Airbus

Industrie 4.0 Applications on the Shop Floor
11:30 am - 12:00 pm
Michael Lickefett, Fraunhofer IPA

Industrie 4.0 & Industrial Internet in Action: Collaboration, Use Cases & Best Practices
12:00 pm - 12:30 pm
Dirk Slama, Bosch SI

Research Papers 02  Autotuning & Thread Mapping

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch

Analog 1+2, Forum

An Analytical Model-Based Auto-Tuning Framework for Locality-Aware Loop Scheduling
11:00 am - 11:30 am
Sandra Wienke, RWTH Aachen University

Performance, Design & Autotuning of Batched GEMM for GPUs
11:30 am - 12:00 pm
Dr. Azzam Haidar, University of Tennessee

TCU: A Multi-Objective Hardware Thread Mapping Unit for HPC Clusters
12:00 pm - 12:30 pm
Ravi Kumar Pujari, TU München

CONFERENCE PASS  EXHIBITION PASS  TUTORIAL PASS  WORKSHOP PASS
PROGRAM MAY BE SUBJECT TO CHANGES
Research Papers 03  Data Locality & Decomposition

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
Substanz 1+2, Forum

An Efficient Parallel Load-Balancing Strategy for Orthogonal Decomposition of Geometrical Data
11:00 am - 11:30 am
Bruno Magalhaes, EPFL

Parallel Community Detection Algorithm Using a Data Partitioning Strategy with Pairwise Subdomain Duplication
11:30 am - 12:00 pm
Alok Choudhary, Northwestern University

TiDA: High-Level Programming Abstractions for Data Locality Management
12:00 pm - 12:30 pm
Dr. Didem Unat, Koç University

BoF 07
June 21, 2016, 11:15 am - 12:15 pm
Booth #220, Hall 3.Via
Dr. Bill Feiereisen, Modelado.Org
Prof. Dr. Siegfried Benkner, University of Vienna
Prof. Dr. Vivek Sarkar, Rice University
Dr. Tim Mattson, Intel
Dr. Romain Cledat, Intel

BoF 08
June 21, 2016, 12:15 pm - 01:15 pm
12:30 pm - 01:45 pm Lunch
Booth #220, Hall 3.Via
Thomas Gibbs, NVIDIA

BoF 09
June 21, 2016, 01:15 pm - 02:15 pm
12:30 pm - 01:45 pm Lunch
Booth #220, Hall 3.Via
Prof. Dr. Dieter Kranzlmüller, LMU & LRZ
Prof. Dr. Wilco Hazeleger, Netherlands eScience Center
Julio Serje, UNISDR
Dr. Antonio Parodi, CIMA Research Foundation
Prof. Dr. Hans-Peter Bunge, LMU
Dr. Sanna Sorvari, Finnish Meteorological Institute
### Distinguished Speakers

**June 21, 2016, 01:45 pm - 03:15 pm**

12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break

**Panorama 1, Forum**

- **The Path to Capable Exascale Computing**
  01:45 pm - 02:15 pm
  Dr. Paul Messina, ANL

- **The Next Flagship Supercomputer in Japan**
  02:15 pm - 02:45 pm
  Prof. Dr. Yutaka Ishikawa, RIKEN AICS

- **The New Sunway Supercomputer System at Wuxi**
  02:45 pm - 03:15 pm
  Prof. Dr. Guangwen Yang, National Supercomputer Center at Wuxi

### Performance Modeling & Prediction

**June 21, 2016, 01:45 pm - 02:45 pm**

12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break

**Panorama 2, Forum**

- **Do You Want FLOPS with That?**
  01:45 pm - 02:05 pm
  Dr. Boyana Norris, University of Oregon

- **Integrated Performance & Power Modeling**
  02:05 pm - 02:25 pm
  Dr. Adolfo Hoisie, PNNL

- **An Overview of Static & Dynamic Techniques for Automatic Performance Modeling**
  02:25 pm - 02:45 pm
  Prof. Dr. Torsten Hoefler, ETH Zurich
Interactive Engineering Technologies
June 21, 2016, 01:45 pm - 02:45 pm
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
Panorama 3 INDUSTRY TRACK, Forum

HPC for 3D Electromagnetic Simulations From Workstation to Cluster & Cloud
01:45 pm - 02:05 pm
Dr. Felix Wolfheimer, CST

CAE as a Service Experiences & Challenges for Customers & Service Providers
02:05 pm - 02:25 pm
Jens Tamm, CPU 24/7

Ubiquitous Engineering Workflows powered with HPC
02:25 pm - 02:45 pm
Sebastian Pena Serna, Independent Expert

Research Papers 04 Scalable Applications
June 21, 2016, 01:45 pm - 02:45 pm
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
Analog 1+2, Forum

OpenAtom: Scalable Ab-Initio Molecular Dynamics with Diverse Capability
01:45 pm - 02:15 pm
Prof. Dr. Laxmikant Kale, University of Illinois at Urbana-Champaign

SPRITE: A Fast Parallel SNP Detection Pipeline
02:15 pm - 02:45 pm
Vasudevan Rengasamy, Pennsylvania State University

Research Papers 05 Machine Learning
June 21, 2016, 01:45 pm - 02:45 pm
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
Substanz 1+2, Forum

Towards Machine Learning on the Automata Processor
01:45 pm - 02:15 pm
Tom Tracy II, University of Virginia

AutoMOMML: Automatic Multi-Objective Modeling with Machine Learning
02:15 pm - 02:45 pm
Prasanna Balaprakash, ANL
BoF 10
June 21, 2016, 02:15 pm - 03:15 pm
02:45 pm - 03:30 pm Coffee Break
Booth #220, Hall 3.Via
Dr.-Ing. Bernd Mohr, JSC
Prof. Dr. Jesús Labarta, BSC
Dr. Mike Dewar, NAG

BoF 11
June 21, 2016, 03:15 pm - 04:15 pm
02:45 pm - 03:30 pm Coffee Break
Booth #220, Hall 3.Via
Dr. Mark Bull, EPCC
Dr. Valeria Bartsch, Fraunhofer ITWM
Prof. Dr. Jesús Labarta, BSC

Panel: Parallel Programming
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Panorama 1, Forum
Prof. Dr. Bill Gropp, University of Illinois at Urbana-Champaign
Brad Chamberlain, Cray
Dr. Mike Heroux, Sandia National Laboratories
Dr. Jeffrey Vetter, ORNL & Georgia Institute of Technology
Dr. Rosa M Badia, BSC

HPC Benchmarking
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Panorama 2, Forum

The HPL Benchmark: Past, Present & Future
03:30 pm - 03:45 pm
Prof. Dr. Jack Dongarra, University of Tennessee & ORNL

The HPCG Benchmark: Challenges It Presents to Current & Future Systems
03:45 pm - 04:00 pm
Dr. Mike Heroux, Sandia National Laboratories

HPGMG: A Supercomputer Benchmark & Metric
04:00 pm - 04:15 pm
Dr. Mark Adams, LBNL

Graph500: A Challenging Benchmark for High Performance Data Analytics
04:15 pm - 04:30 pm
Prof. Dr. David A. Bader, Georgia Institute of Technology
Europe's HPC Ecosystem: The Key Players
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Panorama 3 INDUSTRY TRACK, Forum

The European Cloud Initiative & the European HPC Strategy
03:30 pm - 03:50 pm
Gustav Kalbe, EC

High-Performance Computing at PRACE
03:50 pm - 04:10 pm
Dr. Sylvie Joussaume, LSCE

Development of HPC Technology to Serve the European HPC Ecosystem
04:10 pm - 04:30 pm
Jean-Francois Lavignon, Bull/Atos

Research Papers 06 Datacenters & Cloud
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Analog 1+2, Forum

Supercomputing Centers & Electricity Service Providers: A Geographically Distributed Perspective on Demand Management in Europe & the United States
03:30 pm - 04:00 pm
Dr. Tapasya Patki, LLNL

Resource Management for Running HPC Applications in Container Clouds
04:00 pm - 04:30 pm
Dr. Michela Taufer, University of Delaware

Research Papers 07 Communication Runtime
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Substanz 1+2, Forum

INAM^2: InfiniBand Network Analysis & Monitoring with MPI
03:30 pm - 04:00 pm
Dr. Khaled Hamidouche, Ohio State University

Comparing Runtime Systems with Exascale Ambitions Using the Parallel Research Kernels
04:00 pm - 04:30 pm
Jeff R. Hammond, Intel
BoF 12
June 21, 2016, 04:15 pm - 05:15 pm
04:30 pm - 05:15 pm Coffee Break
Booth #220, Hall 3.Via
Arno Kolster, PayPal
Ryan Quick, PayPal

Tuesday Keynote
June 21, 2016, 05:15 pm - 06:00 pm
04:30 pm - 05:15 pm Coffee Break
Panorama 2, Forum

Tuesday Keynote: Towards Exascale Simulation of Turbulent Combustion
Jacqueline H. Chen, Sandia National Laboratories

ISC Happy Hour
June 21, 2016, 06:00 pm - 07:00 pm
Panorama 1-3 Foyer, Forum

Vendor Parties
June 21, 2016, 07:00 pm - 10:00 pm
Various Locations, Others