The University of California High-Performance AstroComputing Center presents

Computational Astrophysics
2014-2020: Approaching Exascale
Lawrence Berkeley Lab - March 21-22

Friday
8:30 - 9:30 Breakfast on site (LBL - Building 66 Auditorium)
9:30 am Welcome - Joel Primack (UCSC) UC-HPACC 5th year report, this conference
9:45 am - 1:00 pm Latest Progress and Current Challenges – Chair: Peter Nugent
Cosmological simulations – Anatoly Klypin (NMSU), Mike Warren (LANL)
Collisionless fluids – Tom Abel (Stanford)
Galaxy simulations – Dušan Kereš (UCSD), Phil Hopkins (Caltech)
Star formation simulations - Mark Krumholz (UCSC)
Simulations of supernovae and neutron star mergers – Dan Kasen (UCB/LBNL)
Computational neutrino flavor astrophysics – George Fuller (UCSD)
Time domain computing – Julian Borrill (LBNL), Tom Vestrand (LANL)
Berkeley Institute for Data Science (BIDS) - Saul Perlmutter (UCB/LBNL)
Data-driven astronomical inference with machine learning – Joshua Bloom (UCB)
1:00 - 2:00 Lunch provided on site for all registered participants
2:00 - 3:30 pm Visualization
Public outreach – Ryan Wyatt (California Academy of Sciences)
Recent Progress in GPU-based Visualization of N-body and AMR Simulations
- Ralf Kaehler (Stanford/KIPAC)
Volumetric data analysis and visualization with yt – Matt Turk (Columbia) with Alex Bogert (UCSC)
3:30 - 4:00 Coffee Break
4:00-6:00 pm How Can We Improve UC-HPACC? - Chair: Mike Norman
Support campus programs – James Bullock** (UCI)
Develop intercampus/lab programs – Peter Nugent (LBNL)
Expand topical areas covered by UC-HPACC - Mike Norman (UCSD)
Pursue creation of a scientific computing institute – Joel Primack (UCSC)
Roundtable discussion by UC-HPACC campus and lab representatives of what has worked, what needs improvement – including Maruša Bradač* (UCD),
Dušan Kereš (UCSD), Gillian Wilson (UCR), Tom Vestrand (LANL)
6:30-8:30 pm Dinner at Great China Restaurant, 2190 Bancroft Way, Berkeley

Saturday 8:30 am - 9:30 am Breakfast on site
9:30 am - 12:30 pm Greatest Challenges for This Decade – Chair: Joel Primack
Progress porting applications to manycore architectures, NERSC-8 procurement
- Katie Antypas (NERSC Services Director and NERSC-8 Procurement lead)
Capabilities of and simulation software for new high performance computers
- Mike Norman (UCSD), Piyush Mahotra (NAS)
Time domain computing – Peter Nugent (LBNL)
Big Data: storing, moving, mining, visualizing – Mike Norman (UCSD)
Cooperating – e.g., AGORA high-resolution galaxy simulation comparison project – Joel Primack (UCSC)
12:30 pm Lunch provided on site for all registered participants
*to be confirmed, **by Skype