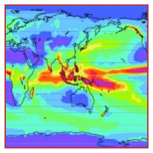
Early SCIENCE Program

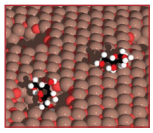
at the Argonne Leadership Computing Facility

Allocations through the Early Science Program (ESP) provide researchers with preproduction hours (between system installation and full production) on the ALCF's next-generation, 10 petaflops IBM Blue Gene system, Mira. This early science period provides projects with a significant head start for adapting to the new machine and access to substantial computational time. During this shakedown period, users assist in identifying the root causes of any system instabilities, and work with ALCF staff to help develop solutions. More than two billion core hours are allocated through ESP.
For more information, visit: http://esp.alcf.anl.gov.



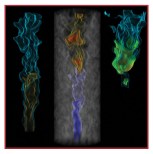
Climate-Weather Modeling Studies Using a Prototype Global Cloud-System Resolving Model

PI: Venkatramani Balaji
Geophysical Fluid Dynamics Laboratory
Award: 150 Million Hours



Materials Design and Discovery: Catalysis and Energy Storage

PI: Larry Curtiss
Argonne National Laboratory
Award: 50 Million Hours

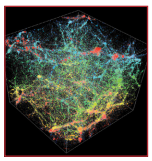


Direct Numerical Simulation of Autoignition in a Jet in a Cross-Flow

PI: Christos Frouzakis
Swiss Federal Institute of Technology
Award: 150 Million Hours

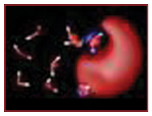
High-Accuracy Predictions of the Bulk Properties of Water

PI: Mark Gordon
Iowa State University
Award: 150 Million Hours



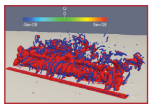
Cosmic Structure Probes of the Dark Universe

PI: Salman Habib
Los Alamos National Laboratory
Award: 150 Million Hours



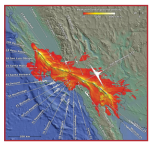
Accurate Numerical Simulations of Chemical Phenomena Involved in Energy Production and Storage with MADNESS and MPQC

PI: Robert Harrison
Oak Ridge National Laboratory
Award: 150 Million Hours



Petascale, Adaptive CFD

PI: Kenneth Jansen
University of Colorado-Boulder
Award: 150 Million Hours



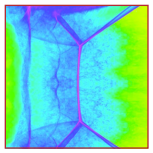
Using Multi-scale Dynamic Rupture Models to Improve Ground Motion Estimates

PI: Thomas Jordan
University of Southern California
Award: 150 Million Hours

Argonne NATIONAL LABORATORY

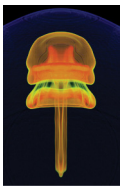
early SCIENCE program

at the Argonne Leadership Computing Facility



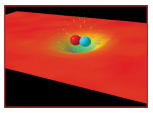
High-Speed Combustion and Detonation (HSCD)

PI: Alexei Khokhlov
The University of Chicago
Award: 150 Million Hours



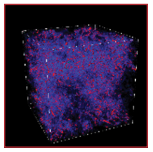
Petascale Simulations of Turbulent Nuclear Combustion

PI: Don Lamb
The University of Chicago
Award: 150 Million Hours



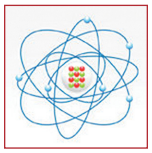
Lattice Quantum Chromodynamics

PI: Paul Mackenzie
Fermilab
Award: 150 Million Hours



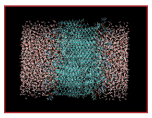
Petascale Direct Numerical Simulations of Turbulent Channel Flow

PI: Robert Moser
University of Texas
Award: 60 Million Hours



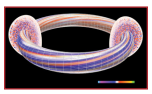
Ab-initio Reaction Calculations for Carbon-12

PI: Steven C. Pieper
Argonne National Laboratory
Award: 110 Million Hours



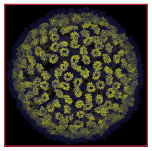
NAMD - The Engine for Large-Scale Classical MD Simulations of Biomolecular Systems Based on a Polarizable Force Field

PI: Benoit Roux
The University of Chicago
Award: 80 Million Hours



Global Simulation of Plasma Microturbulence at the Petascale and Beyond

PI: William Tang
Princeton Plasma Physics Laboratory
Award: 50 Million Hours



Multiscale Molecular Simulations at the Petascale

PI: Gregory Voth
The University of Chicago
Award: 150 Million Hours

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July 2011

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