

SDSC Visualizations Win 'OASCR' Awards at SciDAC 2011

M8 Earthquake, Early Galaxy Simulations among 'People's Choice' Awards

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Two visualizations created by researchers at the San Diego Supercomputer Center (SDSC) at the University of California, San Diego, and other academic institutions are among the recipients of the people's choice OASCR awards announced this week at the 2011 SciDAC (Scientific Discovery through Advanced Computing Program) conference.

'OASCR' stands for the Office of Advanced Scientific Computing Research, and in the tradition of the Hollywood originals, recognize some of the best work in computer-generated visualizations. The OASCRs are awarded annually at the SciDAC conference, which gathers researchers from the computational science community to present scientific results, discuss new technologies, and explore new approaches to collaboration.

This year's event was held July 10-14 in Denver, Colorado. A full list of the 2011 winners can be found [here](#).

"It is an honor to be recognized not once, but twice against such a competitive field," said Michael Norman, SDSC's director and a member of the science research team that received one of the SciDAC awards.

SDSC-related visualizations awarded at SciDAC 2011 include "Ground Motion Visualization of M8 Earthquake Simulation Using Height Field." Using resources at the Oak Ridge National Laboratory (ORNL), the research team created the largest-ever simulation of a Magnitude 8.0 (M8) earthquake, primarily along the southern section of the San Andreas Fault. The research was selected as a finalist for the Gordon Bell prize, awarded annually for outstanding achievement in high-performance computing applications at the annual Supercomputing Conference.

The M8 visualization was led by Amit Chourasia, of SDSC. The simulation work was performed by Yifeng Cui, Kwangyoon Lee, and Jun Zhou from SDSC; Kim Olsen, Daniel Roten, and Steven M. Day (San Diego State University); Thomas Jordan and Philip Maechling (Southern California Earthquake Center); Geoffrey Ely and Patrick Small (University of Southern California); D.K. Panda (Ohio State University); and John Levesque (Cray Inc.)

Also receiving a SciDAC OASCR this year was a visualization called "Modeling Early Galaxies Using Radiation Hydrodynamics." This simulation models not only the gravity and gas dynamics of early galaxies, but also the propagation of light and its interaction with the gas. In part, this helps us understand the impact the heating of gas by light from the first stars had on later star formation.

The simulation was computed using resources at the National Institute for Computational Sciences (NICS) with support from the National Science Foundation, and the Argonne Leadership Computing Facility at Argonne National Laboratory (ANL), which is supported by the Office of Science of the U.S. Department of Energy.

Visualization researchers for that project include Mark Hereld, Joseph A. Insley, Michael E. Papka, and Venkatram Vishwanath (ANL); and Eric C. Olson (University of Chicago). In addition to Daniel R. Reynolds

(Southern Methodist University) science researchers include Robert Harkness, Michael Norman, and Rick Wagner, all from SDSC.

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