



IMAGE COURTESY OF D. LENNBERG, CSSM, UNIVERSITY OF ADELAIDE

Preview: Lattice Quantum Chromodynamics

To be featured in an upcoming issue of *SciDAC Review*, quantum chromodynamics (QCD) is the fundamental theory of strong interactions. Scientists funded by the SciDAC Lattice QCD initiative are working towards exciting breakthroughs, such as the exploration of matter under extreme conditions and tests of the standard model of particle physics. Above is a frame from an animation showing the manner in which QCD vacuum fluctuations are expelled from the interior region of a baryon, like the proton.

Legend of Common Acronyms

SciDAC	Scientific Discovery through Advanced Computing
DOE	U.S. Department of Energy
NSF	National Science Foundation
NASA	National Aeronautics and Space Administration
PI	Principal Investigator
HPC	High-Performance Computing

National Laboratories

Argonne National Laboratory	ANL	http://www.anl.gov/
Brookhaven National Laboratory	BNL	http://www.bnl.gov/world/
Los Alamos National Laboratory	LANL	http://www.lanl.gov/
Lawrence Berkeley National Laboratory	LBL	http://www.lbl.gov/
Lawrence Livermore National Laboratory	LLNL	http://www.llnl.gov/
Oak Ridge National Laboratory	ORNL	http://www.ornl.gov/
Pacific Northwest National Laboratory	PNNL	http://www.pnl.gov/
Sandia National Laboratories	SNL	http://www.sandia.gov/