

# CROSS-CUTTING TECHNOLOGIES IN SUPPORT OF NUCLEAR WEAPONS DESIGN AND ANALYSIS

SAND2007-5819P

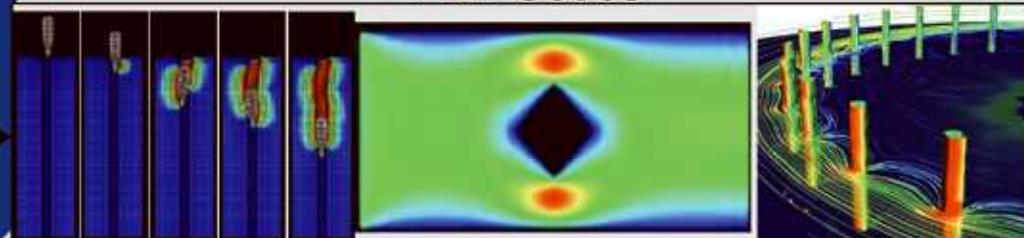


Optimization, UQ



Optimization and uncertainty quantification tools provide mathematical algorithms and software infrastructure for iterative simulation runs to address parameter estimation, optimal design, model sensitivities, and similar analyses. Libraries are deployed through the DAKOTA framework.

## PDE Codes



Nonlinear solvers



Linear Solvers



Preconditioners



Linear Algebra Kernels

Simulation robustness and efficiency rely on nonlinear and linear solvers, as well as underlying capabilities, such as preconditioning and abstract linear algebra kernels. Libraries are deployed through the Trilinos framework.