



Brief ParaView Introduction

Scientific Data Analysis and Visualization for Petascale Computing

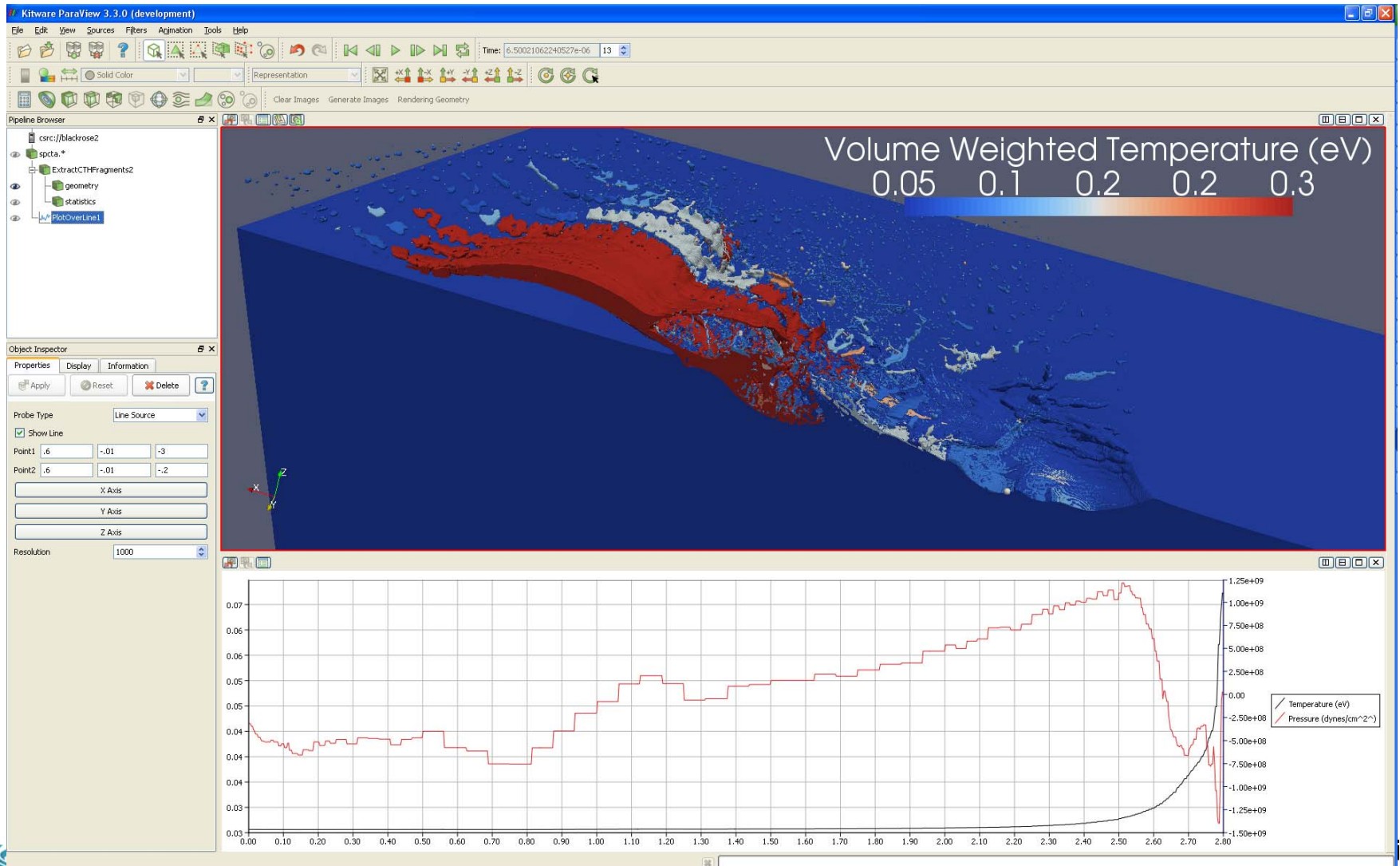
July 28, 2008

Kenneth Moreland
Sandia National Laboratories
SciDAC Institute for Ultrascale Visualization

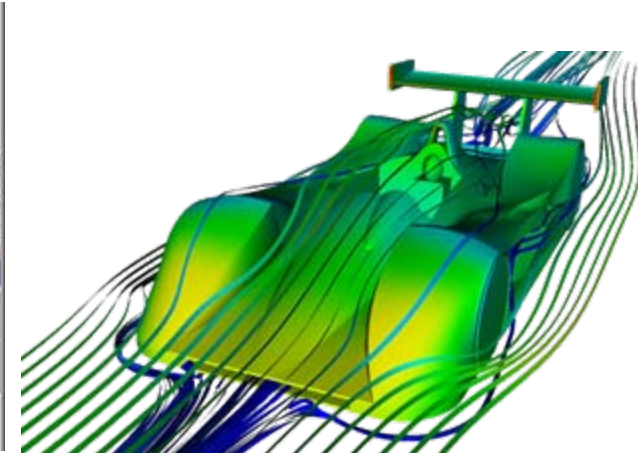
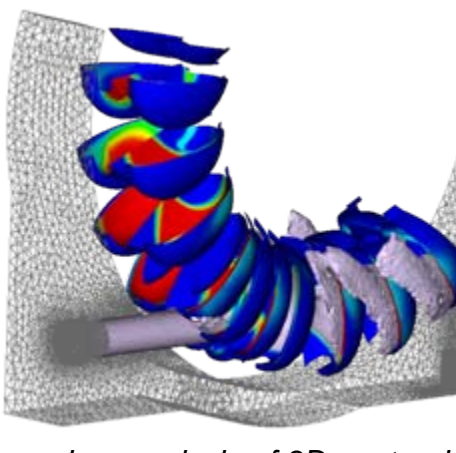
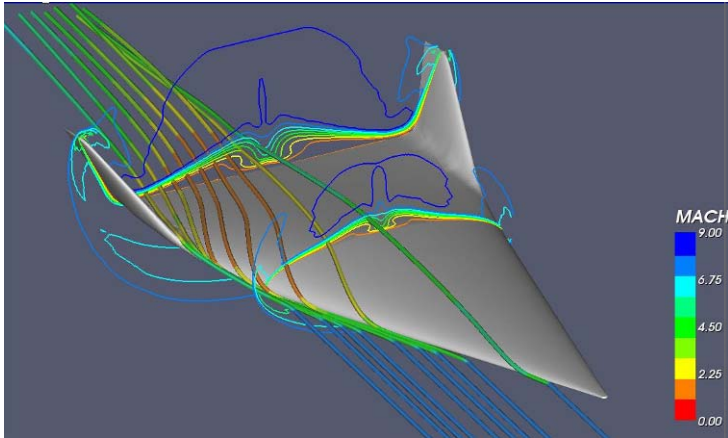


Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

General Visualization with ParaView



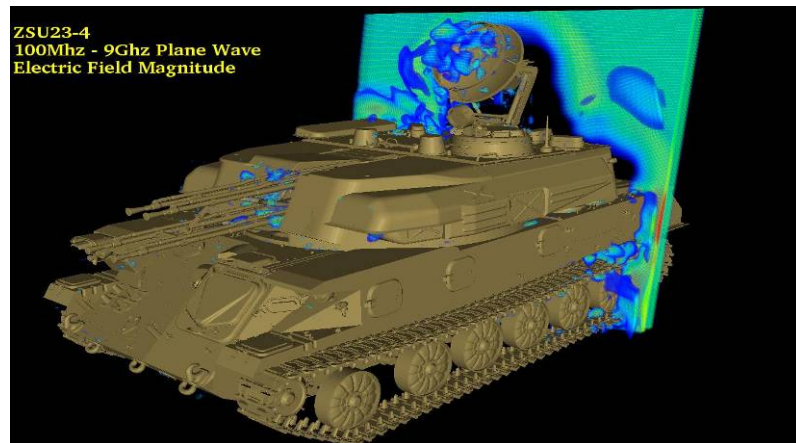
ParaView Usage: Around the World



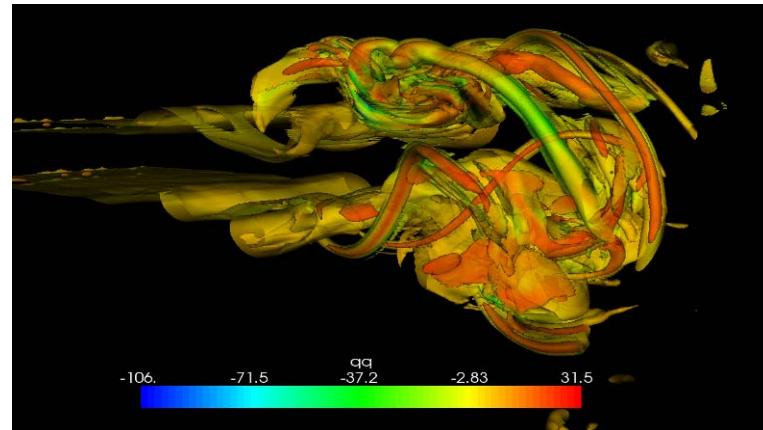
Analysis of the "ELAC" two-stage-to-orbit space system and an analysis of 3D unsteady free surface flows in PELTON turbines, Swiss Supercomputing Center (CSCS).

Sandia and CSCS recently authored two joint papers.

CFD group at NACAD/COPPE/UFRJ, Rio de Janeiro, Brazil



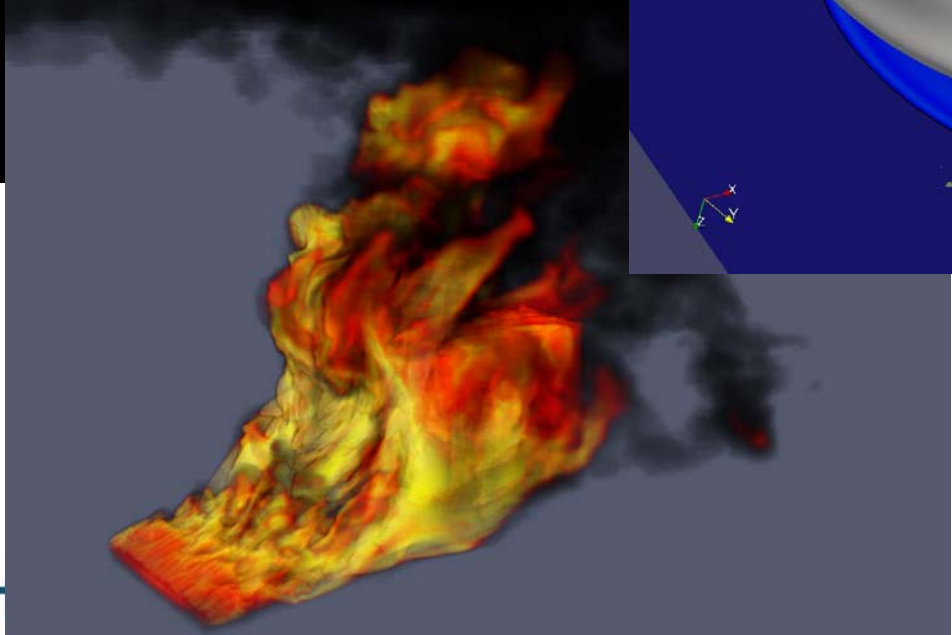
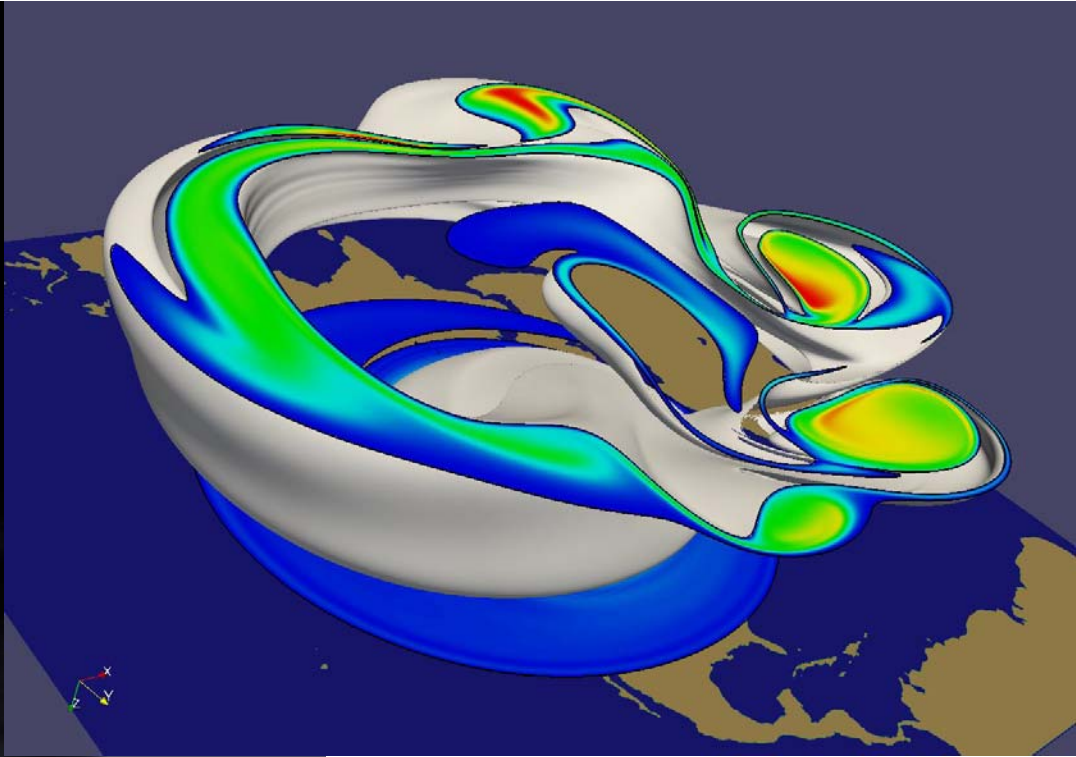
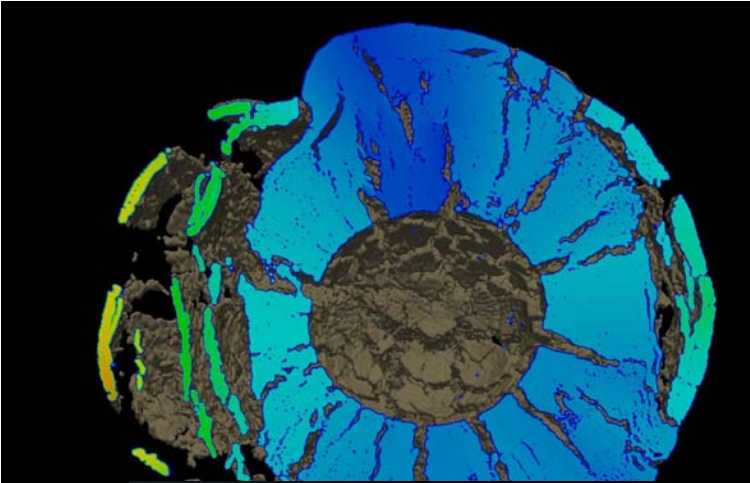
ZSU23-4 Russian Anti-Aircraft planar wave. 2.5 billion cells, US Army Research Laboratory



DNS simulation of a planar jet. Vorticity norm colored by positive Q criterion. LASEF/IST, Lisboa, Portugal



ParaView Usage: Large Scale Visualization

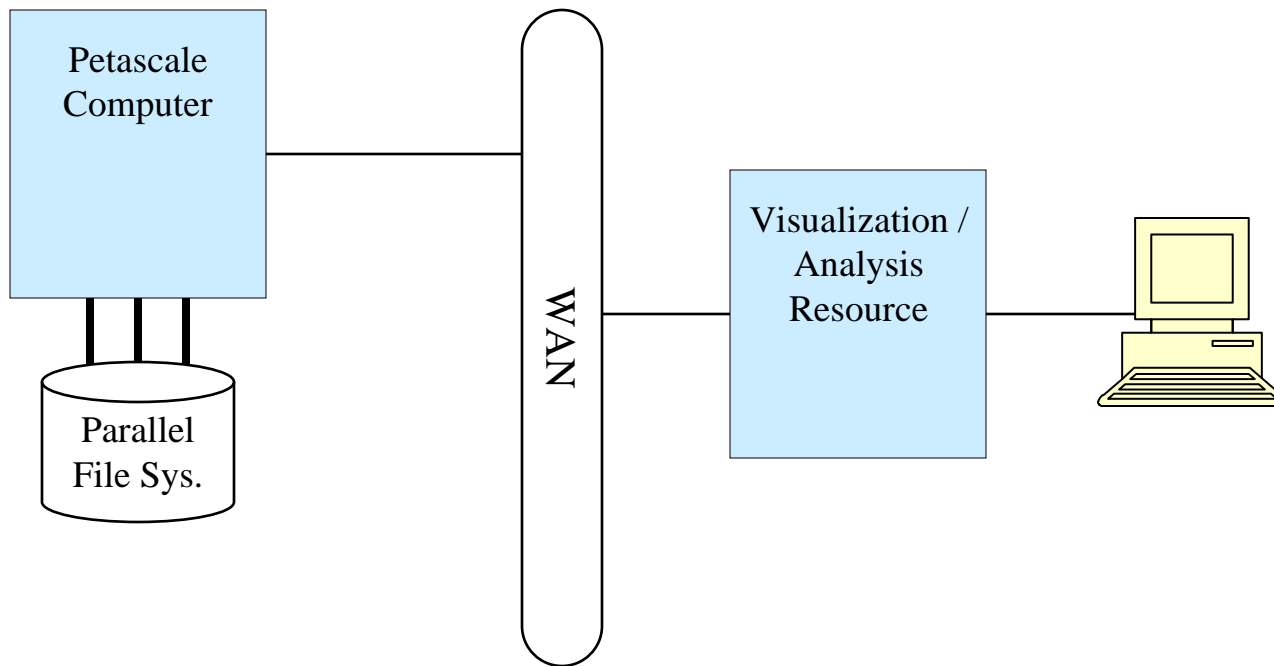




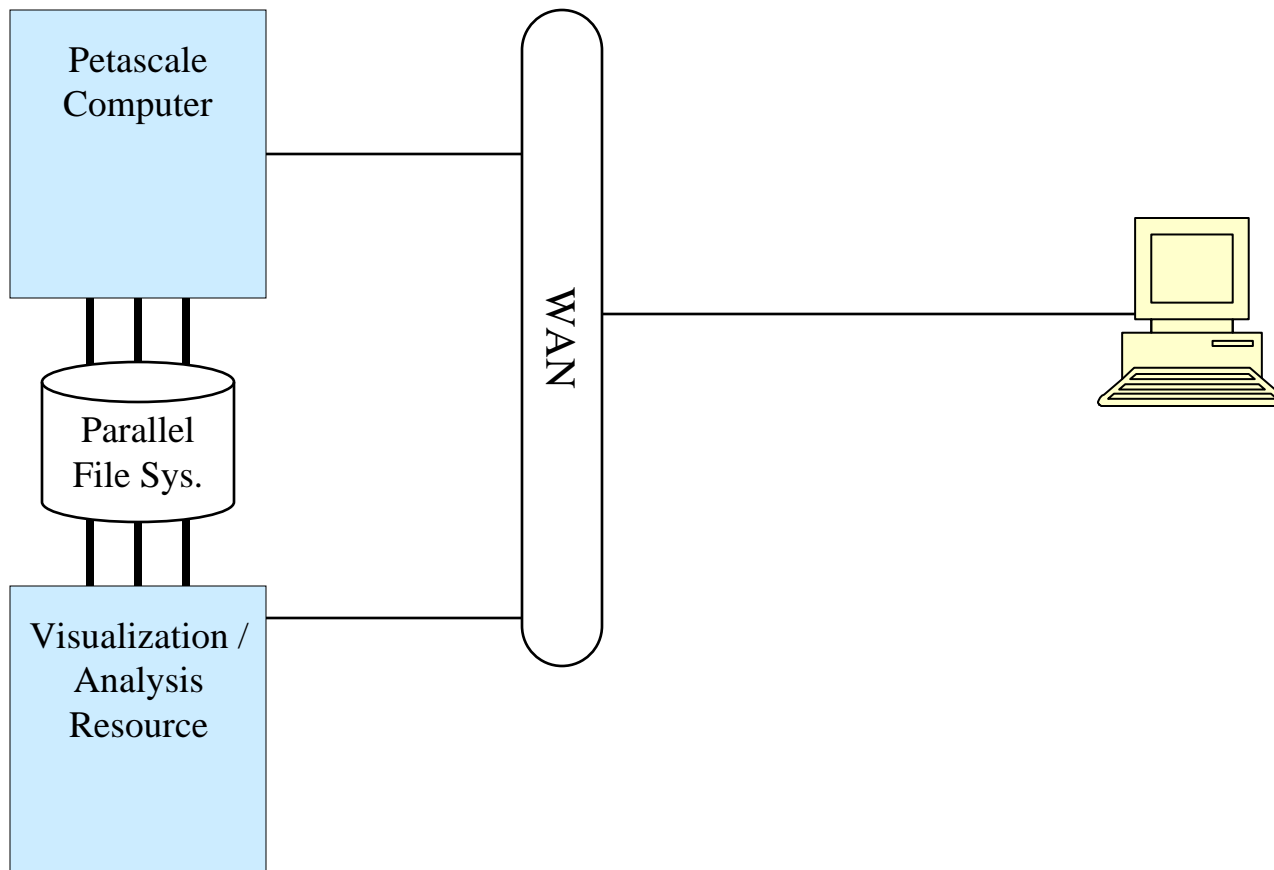
ParaView Availability

- Free to download and use (www.paraview.org).
- Cross platform.
 - Windows, Mac OS X, Unix (Linux, AIX, HP, Sun, IRIX, ...).
- Parallel Processing Servers.
 - Linux-based clusters (with and without GPU).
 - BlueGene/L.
 - Cray XT3 (RedStorm) (batch processing only).
 - ASC Purple.

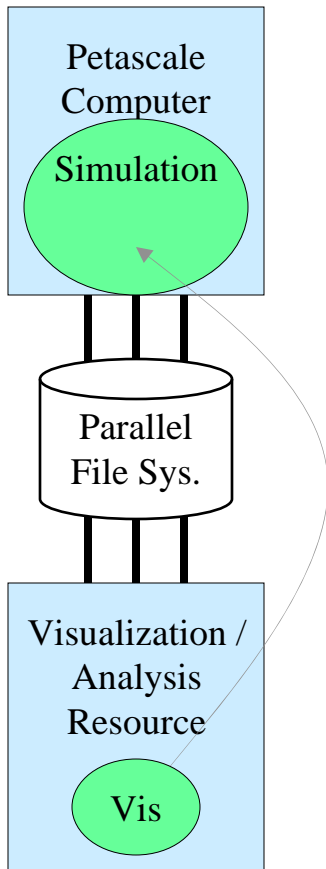
Future Work: I/O Dominating Factor



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