ViSUS
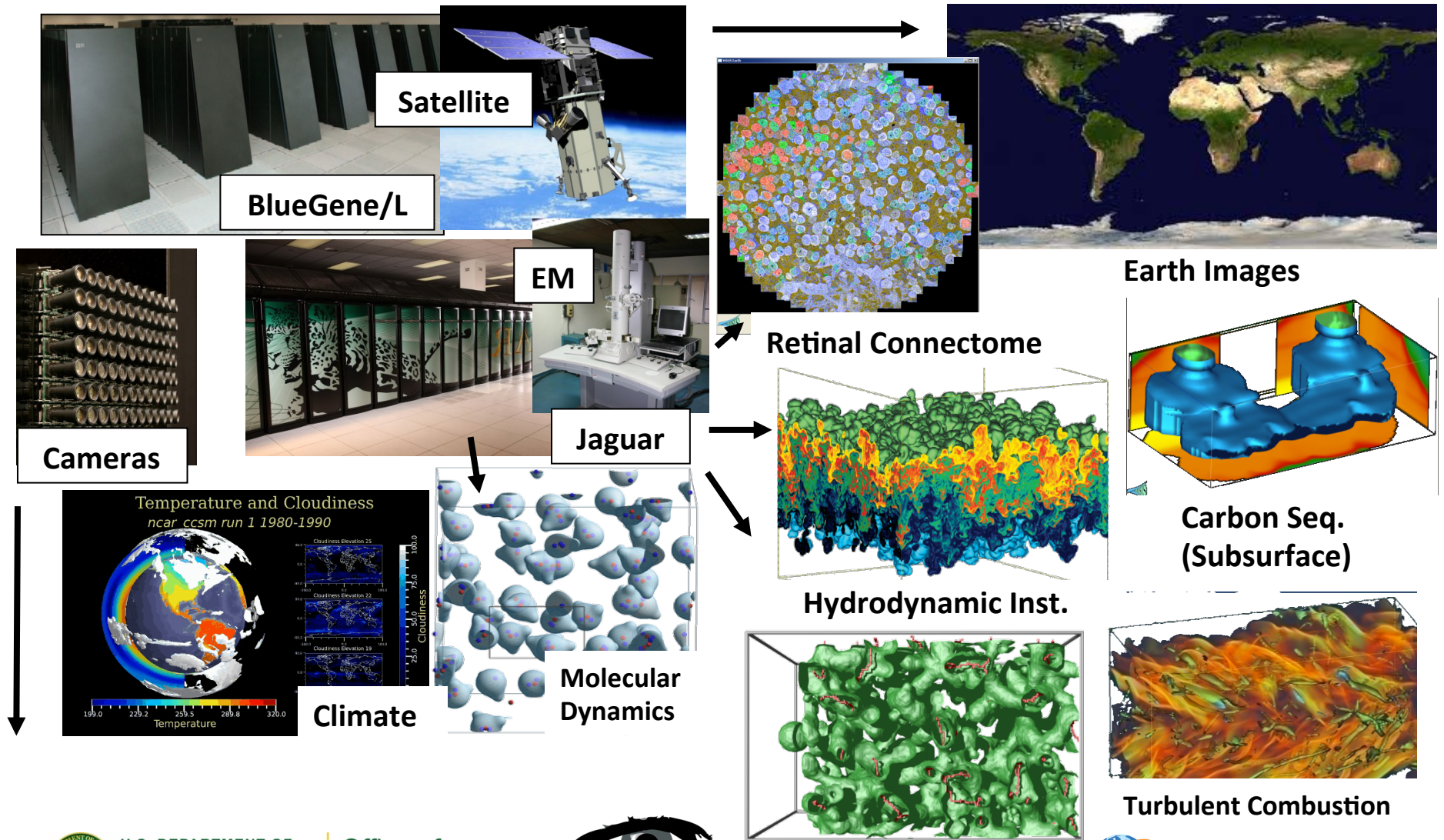# Visualization Streams for Ultimate Scalability
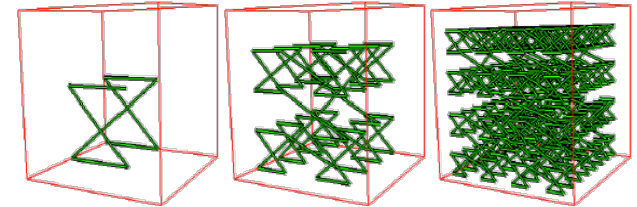
Massive Simulation and Sensing Devices Generate Great Challenges and Opportunities

Satellite

BlueGene/L

EM

Cameras

Jaguar

Retinal Connectome

Earth Images

Carbon Seq. (Subsurface)

Hydrodynamic Inst.

Temperature and Cloudiness
ncar_ccsm run 1 1980-1990

Climate

Molecular Dynamics

Turbulent Combustion

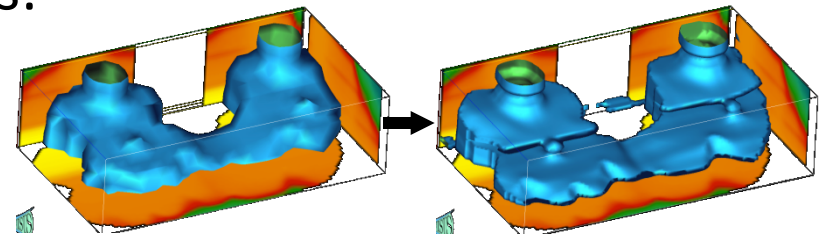# ViSUS Provides: Efficient Data Management and Processing

- Advanced data storage techniques:
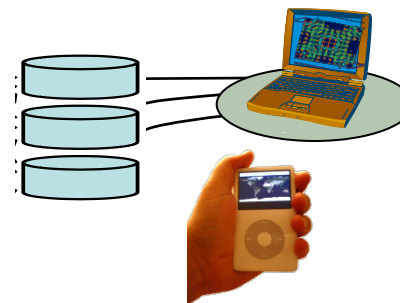 - Data re-organization.
  - Compression.

- Advanced algorithmic techniques:
  - Streaming.
  - Progressive multi-resolution.
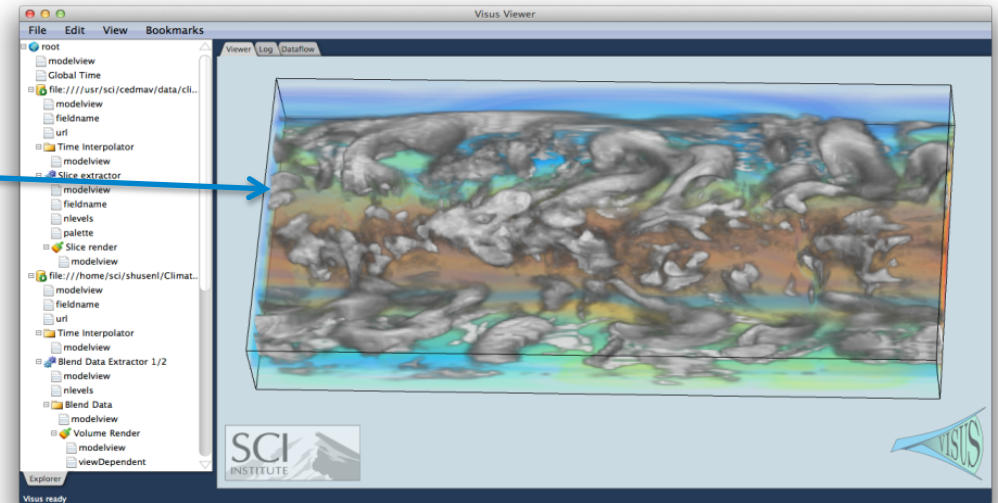 - Out of core computations.

- Scalability across a wide range of running conditions:
  - From laptop, to office desktop, to cluster of PC, to BG/L.
  - Memory, to disk, to remote data access.

ViSUS Enables: Remote Climate Analysis and Visualization

- ViSUS data streams allow to merging multiple datasets in real time

- Time interpolation of and concurrent visualization of climate data ensembles defined on different time scales

- Server side and client side computation of statistical functions such as median, average, standard deviation, …….

Standard Deviation and Average of ten climate models