Wide-area In Transit Data Processing For Real-Time Monitoring

International Collaboration Framework for Extreme Scale Experiments (DOE ASCR project)

We demonstrate cross-Pacific data processing capability orchestrated by ORNL ADIOS system.

The data analysis workflow involves (1) transmission of Gas Puff Imaging (GPI) data, (2) detection of blobs, (3) tracing blob movements, and (4) displaying the summarized results on iOS devices.

GPI data streams from Singapore to Georgia Tech using transport methods developed by Georgia Tech and Rutgers University.
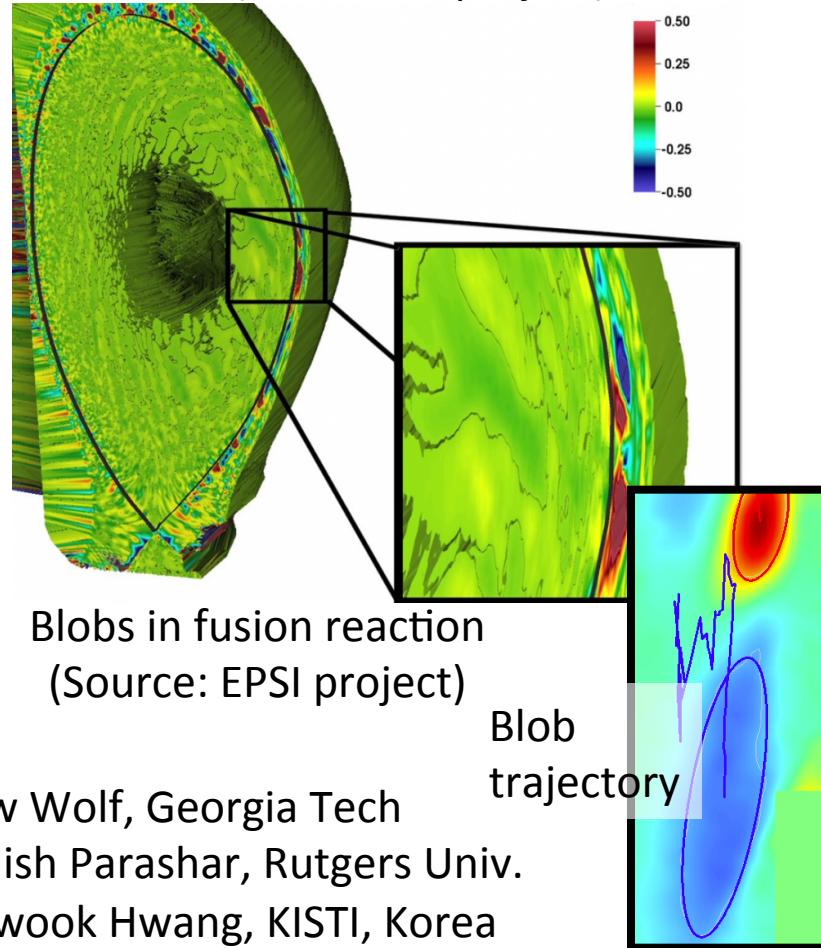
The blob detection procedure uses FastBit technology for feature identification.

Blobs in fusion reaction (Source: EPSI project)

Blob trajectory

Team: Jong Choi, Yuan Tian, Gary Liu, Norbert Podhorszki, David Pugmire, Scott Klasky, ORNL
Alex Sim, John Wu, LBNL
Michael Churchill, C.S. Chang, PPPL

Xinyan Yan, Matthew Wolf, Georgia Tech
Mehmet Aktas, Manish Parashar, Rutgers Univ.
Eun Kyu Byun, Soonwook Hwang, KISTI, Korea