

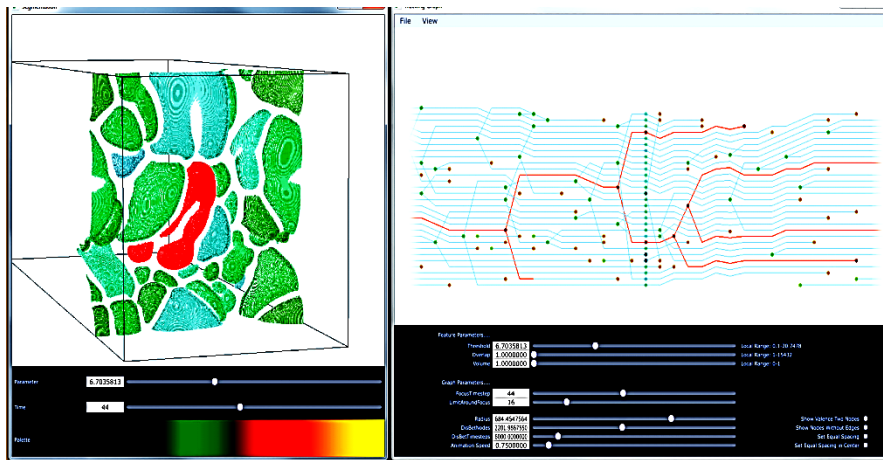
Time-Varying Data Analysis with Time Activity Curves

Technology

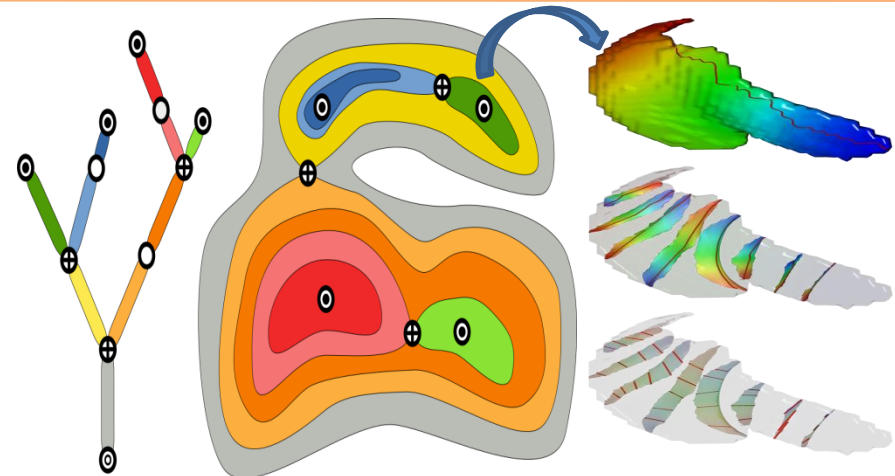
- Robust analysis based on topological definitions
- Fast parallel evaluation of dependent statistics
- Compute graph abstractions for multi-resolution feature representation
- Computer graph models of concurrent tracking of features at multiple scales
- Fast access and computation of dependent statistics

Result/Impact

- Orders of magnitude in data reduction from raw data to unrestricted feature space
- Orders of magnitudes speedup reducing batch jobs into interactive processing
- Enable scientists to explore the feature space interactively and understand
- Allow data-driven characterization of turbulence from burning cell analysis



(Left) Presentation of a feature selected in 3D. (Right) Corresponding tracking graph. The color selection (red) used on the feature is used to highlight its time evolution on the graph.



Topological model (left) representing multiple possible nested features of interest (middle). Each feature selection leads to different shape characterization and statistics