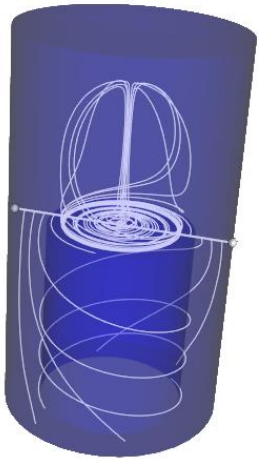


OSUFlow+VTK Integration

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Objectives:

- Visualize large scale flow simulation data such as Nek 5000 and MJO climate simulations
- Make available advanced parallel and out-of-core integral curve computation algorithms to the application scientists
- Support three-dimensional time-varying vector data in a wide variety of file formats and data types (curvilinear, unstructured, regular grids)



Unstructured grid



Curvilinear grid

Impact:

- SDAV (OSU, Kitware, ANL) researchers can more quickly disseminate their cutting-edge flow visualization research results through VTK data models
- Application scientists can plug in their data to the next generation SDAV visualization software more easily
- SDAV software (OSUFlow, VTK, Paraview) are more tightly integrated together

Accomplishments

- Software: A new and improved OSUFlow software design for DOE's leadership computing facility
- Publications
 - Chun-Ming Chen and Han-Wei Shen, "**Graph-based Seed Scheduling for Out-of-core FTLE and Pathline Computation**", IEEE Symposium on Large Data Analysis and Visualization 2013
 - Chun-Ming Chen, Boonthanome Nouanesengsy, Teng-Yok Lee, Han-Wei Shen, Flow-Guided File Layout for Out-of-core Pathline Computation, IEEE symposium on Large Data Analysis and Visualization