Title: Multi-Zonal Multi-Physics Modeling: FSI and Conjugate Heat/Mass Transfer

Instructors: Robert Campbell and Brent Craven, Penn State University

Description: In this class, multi-zonal approaches to multi-physics modeling in OpenFOAM will be presented, with specific applicability to fluid-structure interaction (FSI) and conjugate heat/mass transfer modeling. In particular, the following topics will be reviewed:

- General overview of multi-zonal, partitioned approaches for solving separate sets of governing equations on separate meshes
- Interface coupling schemes for multi-zonal boundary condition coupling
- Subiterative coupled solution strategies
- Practical FSI and conjugate heat/mass transfer examples

Tutorials for FSI and conjugate multi-physics transport problems will be presented and provided to the student for independent study.

Duration: 90 minutes

Date and Location: 13 June 2011, Penn State University, State College, PA, USA