Title: NREL Wind Farm Tool and Tutorials

Instructor: Matt Churchfield, National Renewable Energy Laboratory

Description: This course will introduce a method in which to perform wind farm CFD simulations using OpenFOAM. The course has two main topics: 1) inflow atmospheric turbulence generation using large-eddy simulation, and 2) the use of the actuator line method to model turbines. The course will merge these two subjects by showing how turbulent inflow data can be saved as time-varying planes that can be used as inflow for a wind farm simulation. Although the course is geared toward large-eddy simulation, the actuator line turbine model is applicable to unsteady RANS and detached-eddy simulation.

Duration: 90 minutes

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