



JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Friday, September 21, 2018
3:00 PM, 132 Gilman Hall

"The Simulation and Modeling of Turbulent Flows"

**Presented by Prof. Krishnan Mahesh
University of Minnesota
College of Science & Engineering**

Our group at the University of Minnesota focuses on fundamental advances in numerical algorithms, and understanding of flow physics that allow the prediction of engineering turbulent flows. This presentation will discuss key aspects of such simulation alongside illustrative examples.

We will discuss a recently developed unstructured overset grid methodology and its application to particle-resolved DNS of several thousands of particles in turbulent flow. We will discuss global stability and adjoint analyses for three-dimensional complex baseflows, and illustrate its application to jets in crossflow.

Finally we will present an integral analysis for axisymmetric boundary layers in the presence of pressure gradients, and illustrate its application to interpret LES results.