SPEAKER:

Chase Ashby, University of Kentucky

TITLE:

Grid Adaptation for Functional Outputs: Application to Two-Dimensional Inviscid Flow

ABSTRACT:

An error estimation and grid adaptive strategy for estimating and reducing simulation errors in integral functionals of PDEs is discussed. Adaptive criteria for computational meshes is derived using the method of adjoint-weighted residuals that relates the local residual errors of both the primal and adjoint solutions to the global error in the functional of interest. This allows for the generation of a mesh fine-tuned to the quantities of interest. Numerical results are discussed for two-dimensional inviscid flow over the NACA 0012 airfoil.