

DOMINIQUE PELLETIER, École Polytechnique de Montréal, Montréal, Ontario
Sensitivity and uncertainty analysis in CFD

In this talk we present the sensitivity equation method (SEM) to perform sensitivity and uncertainty analysis of CFD model. A formulation of the SEM is presented that unifies both value and shape parameters. The SEM is used to cascade uncertainty in the input through a CFD code to obtain uncertainty estimates on the outputs of the CFD simulation. Examples will be presented for flows with strongly temperature dependent properties. Application to turbulent flows will also be discussed.