Department of Applied and Computational Mathematics and Statistics Colloquium

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The Challenge of Accurate Prediction of Fluid Motion

Over the last 40 years there have been great advances in computer hardware, solvers (methods for solving Ax=b), meshing algorithms, time stepping methods, adaptivity and so on. Yet accurate prediction of fluid motion (for settings where this is needed) is still elusive. This talk will review three major hurdles that remain: ensemble simulations, time accuracy and model stagnation. Three recent ideas where numerical analysis can help push forward the boundary between what can be done and what can't be done will be described.

This talk is based on joint work with Cartalin Trenchea, Ming Chen, Michael McLaughlin, Kiera Kean, Wenlong Pei [Pitt], Nan Jiang [Missouri S&T], Joe Fiordelino [NSWC], Ali Pakzad [Indiana], Victor DeCaria [ORNL], Yao Rong, Yi Li, Li Qin, Haiyun Zhao [MS], Yong Li [Google], Ahmet Guzel [Batman U], Songul Kaya-Merdan [METU], Michael Schneier [Bettis APL]

Friday, February 28, 2020
4:15PM – 5:15 PM
127 Hayes-Healy Center

Colloquium Tea 3:45 PM to 4:15 PM 101A Crowley Commons Room