

Semi-Plenary Lecture



Professor Clint Dawson

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Title: Hurricane Storm Surge Modeling: The State of the Art and Future Development

Storm surge due to hurricanes and tropical storms results in loss of life, destruction of property, and can alter the landscape of coastal regions. Storm surge is driven by wind and wind-induced waves. Accurate computer models of storm surge must account for the coupling of wind forcing, wave radiation stresses and circulation. In this talk, we will describe the development and application of the state-of-the-art storm surge model ADCIRC. Applications of ADCIRC to hindcast studies of Hurricanes Katrina and Rita, and forecasts of Hurricanes Gustav and Ike, will be presented. We will also discuss the development of the next generation model of ADCIRC, which involves new mathematical models, improved algorithmic development and petascale computing.

Brief Biography:

Dr. Clint Dawson received bachelors and masters degrees from Texas Tech University in mathematics, and a Ph.D. in mathematical sciences at Rice University under the direction of Mary F. Wheeler. He was an NSF Postdoctoral Fellow and Dickson Instructor at the University of Chicago, before returning to Rice as a faculty member. He later moved to The University of Texas, where he joined the Texas Institute for Computational and Applied Mathematics (now the Institute for Computational Engineering and Sciences or ICES), and the department of aerospace engineering and engineering mechanics. He is now a professor in the department, and heads the Computational Hydraulics Group in ICES. Prof. Dawson's research includes the development of numerical methods for flow and transport in shallow water and porous media, data assimilation and parameter estimation, and high performance computing.