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Other - Coast to Cosmos Lecture Series

Water Modeling for Coastal, Marine and Water Resources Projects: Tools and Cases

Dale Kerper and Jesper Kjelds, Danish Hydraulic Institute

Digital Media Center Theatre
January 20, 2015 - 01:30 pm

Abstract:

The Danish Hydraulic Institute (DHI) is an independent, self-governing, research and consulting organization with headquarters located north of Copenhagen, Denmark. International offices operate in North America, Europe, Australia, New Zealand, Asia and South America. Worldwide, DHI has a staff of approximately 1,200 people, the majority of whom are professional engineers and scientists with post-graduate qualifications and several years of research, project and development experience. DHI offers a broad spectrum of solutions, model test facilities and software tools related to offshore, coastal, and estuarine sediment transport and morphology; port hydraulics; integrated water resources; river, lake, reservoir, water quality, and ecology; urban hydraulics; flow monitoring and forecasting; and environmental engineering. DHI US was established in 1997 with offices in Denver, CO, Solana Beach, CA, Portland, OR.

The presentation will focus on modeling tools and case stories within Water resources : MIKE FLOOD, MIKE SHE, MIKE CUSTOMISED (Watershed management, Rivers, dams and reservoirs, Flood management and forecasting, Groundwater management, Irrigation, Water quality) Coastal and Marine Modeling : MIKE 21 and MIKE 3 (Coastal & Shoreline Morphology; Coastal Zone & Shoreline Management; Storm Surge modeling; Metocean hindcasting & forecasting; Oilspill)

Speaker's Bio:

Mr. Dale Kerper, P.E.

Dale has more than 25 years of experience performing engineering studies in the marine, coastal, estuarine and riverine environments. Specific areas of expertise are in regards to physical and numerical modeling of hydrodynamics (water levels, currents and waves), salinity, temperature and sediment transport. Dale has extensive experience applying a variety of numerical models to these application areas, including MIKE 3, MIKE 21, MIKE 11 and MIKEFLOOD. Mr. Kerper was the Project Manager and Technical Lead on the Del Norte County Flood Insurance Study for FEMA Region IX. In recent years, Mr. Kerper's project work has centered on flood modeling in support of FEMA coastal and riverine studies nationwide and dambreak inundation studies in the US. Storm surge flooding studies work includes performing storm surge and wave modeling for the entire San Francisco Bay for FEMA, combined riverine and storm surge modeling for the Smith River estuary in Northern California for FEMA, Flood Forecasting in the Venice Lagoon in Italy for informing the operation of flood control gates at the inlets to the lagoon, and acting as a representative for FEMA's internal review of the post-Katrina Louisiana Flood Insurance Study and FEMA's ongoing post-Ike Texas Flood Insurance Study.

Jesper Kjelds

Jesper's engineering and management experience with water management issues involving multiple stakeholders includes project leadership and engineering development of complex water models to assess and communicate water risk in settings worldwide. A civil engineer and employee of DHI since 1990, he has worked on water management projects around the world (US, Europe and South East Asia), applying and further developing DHI's suite of MIKE software. In 2006 Jesper started and lead group-wide initiative on development and implementation of a generic platform for development of customized information and decision support systems.

He has lead and trained watershed management and flood modeling courses to federal, state and local agencies and at universities in many countries around the world. From 1993-1995 Jesper was stationed in Bangladesh and worked on a number of water resources projects under the National Flood Action Plan Project framework. In 1997 Jesper moved to the USA to start the US subsidiary for DHI. He served as president of DHI USA for eight years (1997-2005). Since 2005 Jesper has been working at DHI's corporate office in executive positions responsible for managing DHI's strategic business and marketing development efforts.