Department of Ocean and Resources Engineering

Seminar

Capstone Design: FEMA FIRM Modernization, Part 1

by

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Abstract

In 2003, the Federal Emergency Management Agency (FEMA) issued a request for proposals for the modernization of the Flood Insurance Rate Maps (FIRM). Currently, FIRM do not adequately reflect hurricane and tsunami flood risks. FEMA requires that a probabilistic approach must be used to determine the 100, 200 and 500-year return flood limits.

The Spring 2006 Ocean and Resources Engineering Capstone Design Course (ORE 783) project is the development and implementation of a probabilistic approach to model extreme wave events to simulate updating the FIRM maps with 100 and 200-year return extreme wave events. The class was divided in two teams, each assigned to a different section of coastline on the South Shore of Oahu. For this project flooding from hurricane, tsunami and extreme swell events is considered for the two selected domains. This seminar will cover the probabilistic approaches developed by two teams in the ORE 783 class. The hurricane, tsunami and swell modeling and resulting inundation are covered in Part 2 of this series on May 3, 2006.