

School of Geosciences

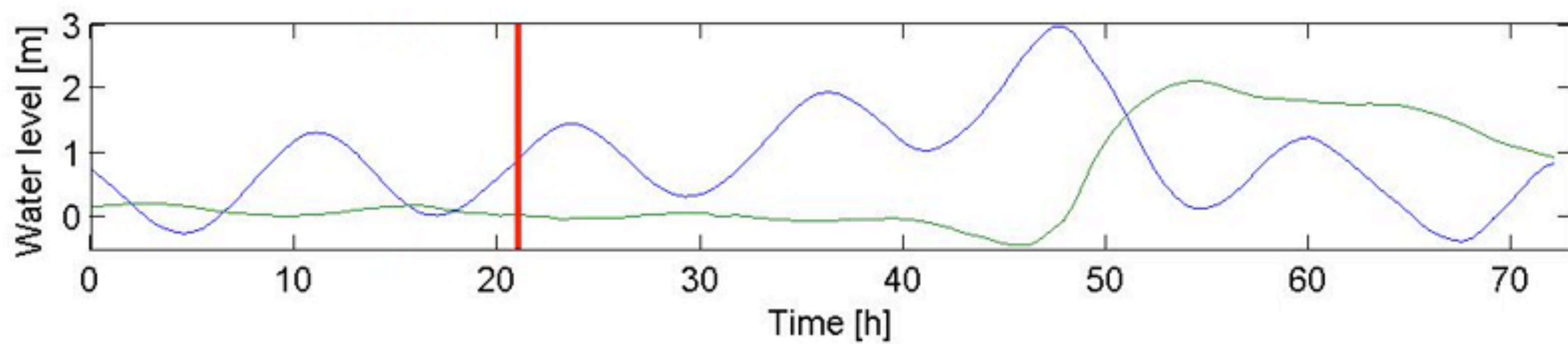
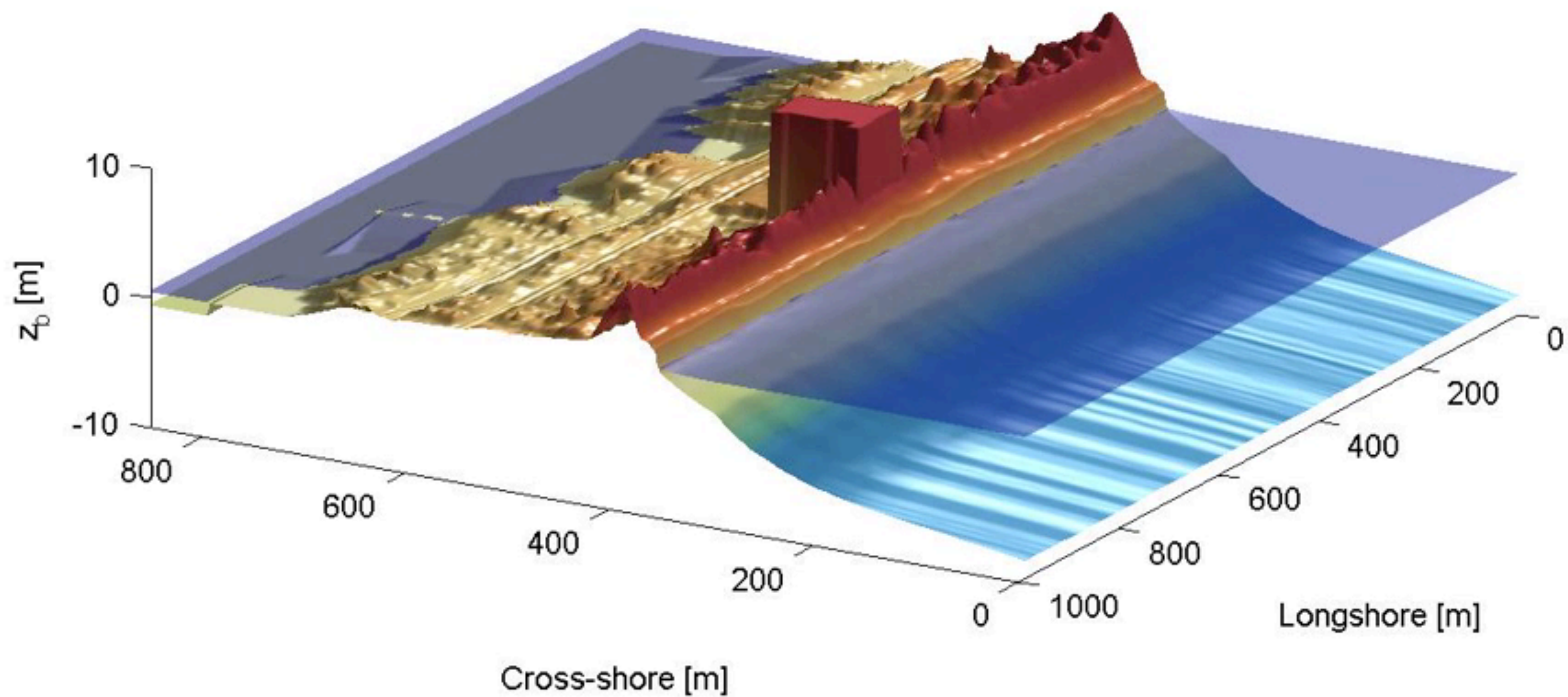


What is X Beach?

simulation of Hurricane Sandy (October 2012) on

the area of Cape Breton, with each model.



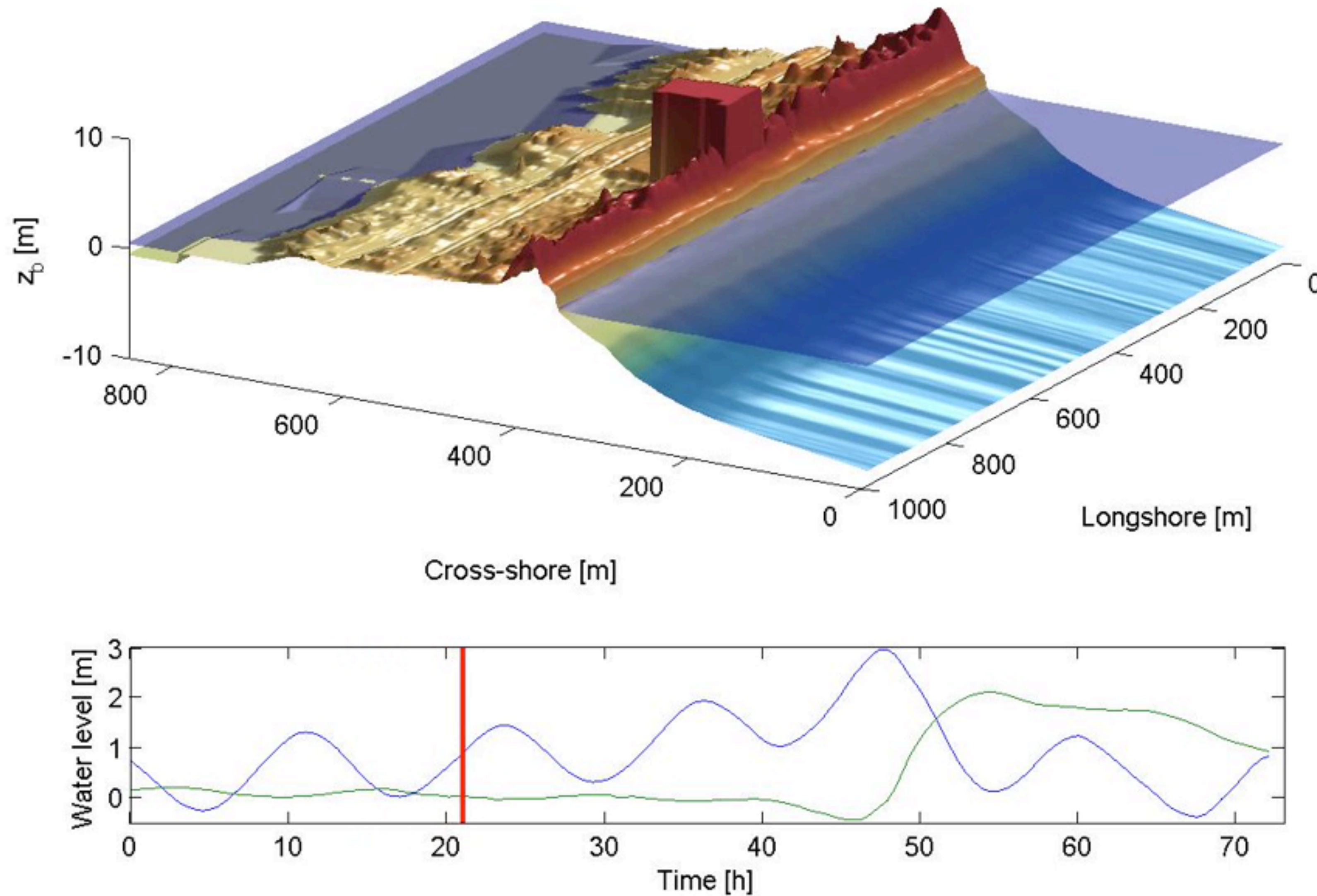






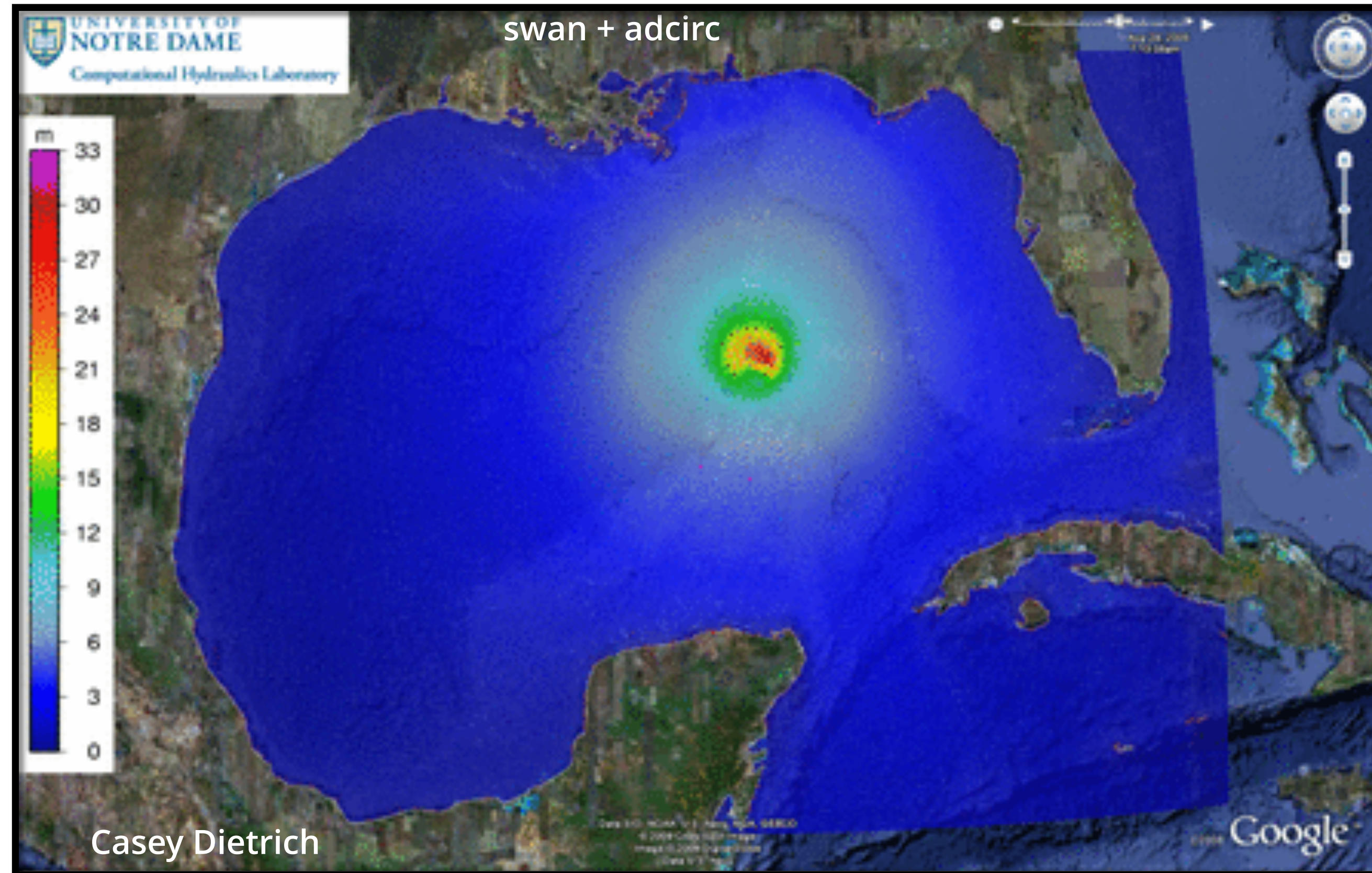
simulation of the impact of Hurricane Sandy (October 2012) on the area of Camp Osborne, Brick, NJ, with a 2DH XBeach model.

# What is XBeach?





# Models integration to solve complex systems



Significant wave heights (m) during Katrina (2005) in the Gulf of Mexico.

CSDMS	
COMMUNITY SURFACE DYNAMICS MODELING SYSTEM	
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Program	
1DBreachingTurbidityCurrent	1D Breaching Turbidity current model for generat
2DFLOWVEL	Tidal & wind-driven coastal circulation routine
ADCIRC	Coastal Circulation and Storm Surge Model
AlluvStrat	Rules-based model to generate a 2-dimensional c
AquaTellUs	Fluvial-dominated delta sedimentation model
Auto marsh A.k.a. auto_marsh	Cellula automata model for salt marsh evolution
Avulsion A.k.a. Debouche	Stream avulsion model
CEM	Coastline evolution model
CMFT	Coupled salt Marsh - tidal Flat Transect model
Cliffs	Numerical model to compute tsunami propagation
Coastal Dune Model	Evolution of Coastal Foredunes
Cross Shore Sediment Flux	Cross-Shore Sediment Flux Equations
DELTA	Simulates circulation and sedimentation in a 2D t
DROG3D	3-DIMENSIONAL DROGUE TRACKING ALGORITHM
Delft3D	3D hydrodynamic and sediment transport model

ESMF

ESPC  
EARTH SYSTEM PREDICTION CAPABILITY