

Benchmark #2

This experiment has a single solitary wave propagating up a triangular shaped shelf with an island feature located at the offshore point of the shelf. Free surface information was recorded via resistance-type wave gauges and sonic wave gages. Velocity information was recorded via ADV's.

For this benchmark, we will compare free surface, velocity, and turbulence information recorded throughout the tank.

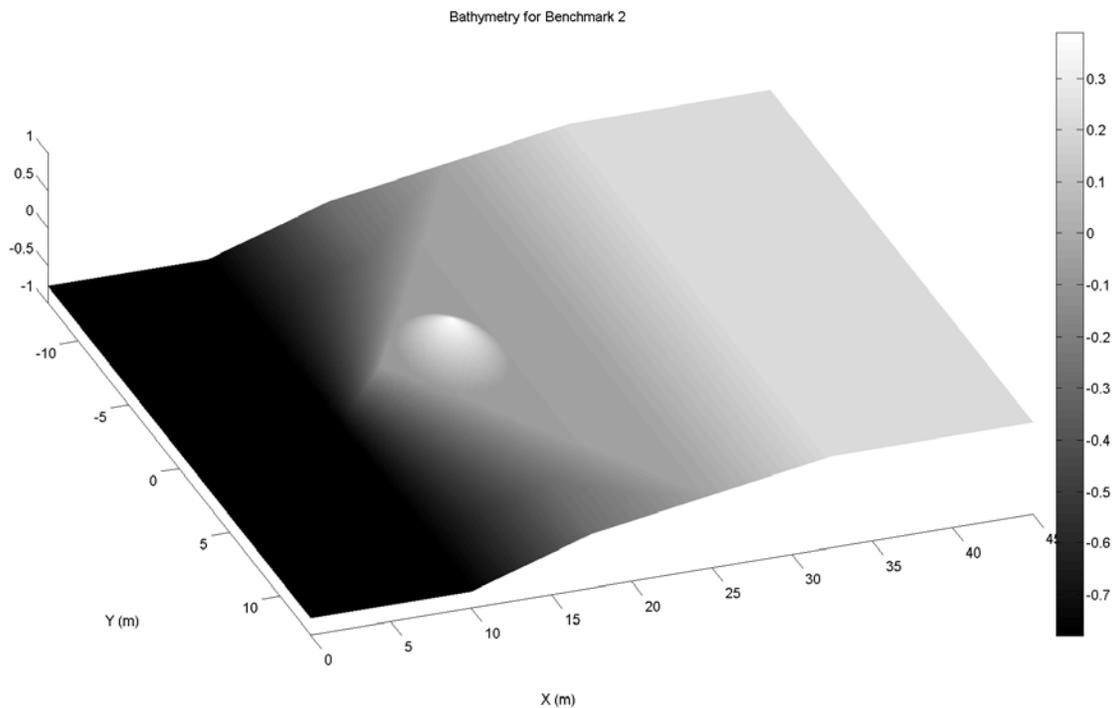
SETUP:

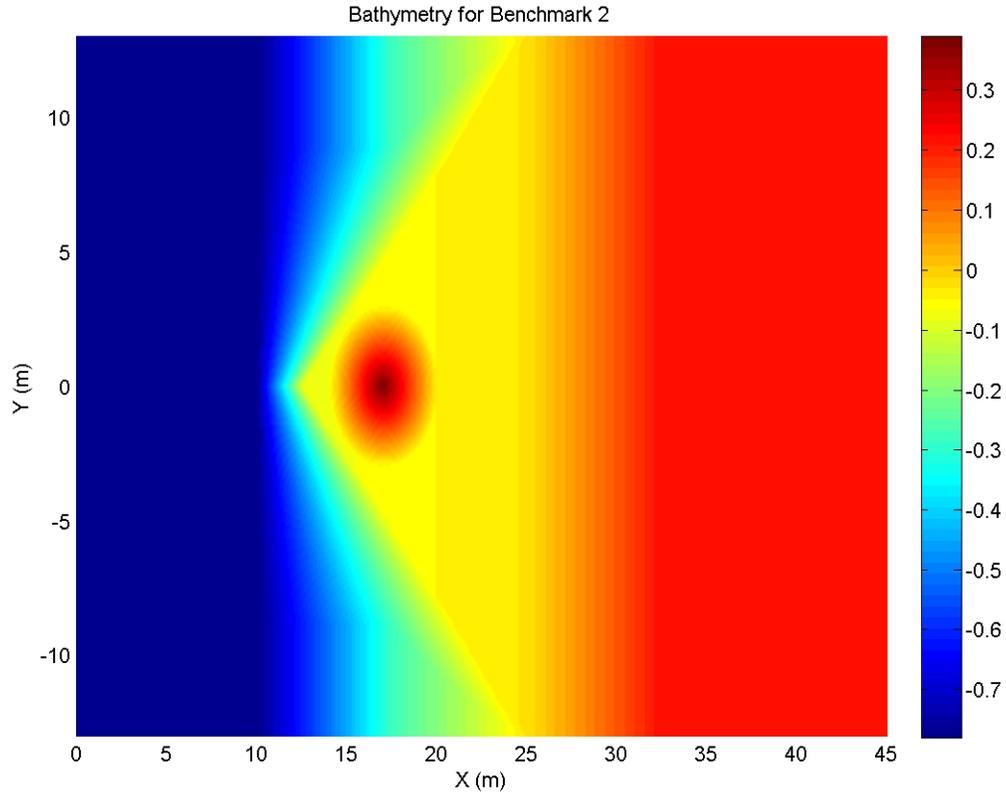
Water depth @ Wavemaker: 0.78m

Solitary wave height @ wavemaker: 0.39m

Bathymetry:

Figures below (which includes the bathymetry data) can be plotted in Matlab with the "plot_bathy.m" script.





Benchmark Data

Free Surface Elevation Measurements

Recorded @ $y=0$ (centerline of basis) at following x-locations:

$X=7.5\text{m}, 13.0\text{m}, 21.0\text{m}$

Recorded @ $y=5.0$ at following x-locations:

$X=7.5\text{m}, 13.0\text{m}, 21.0\text{m}$

Recorded @ $x=25$ at following y-locations:

$Y=0.0\text{ m}, 5.0\text{m}, 10.0\text{ m}$

Benchmark Data

Velocity and Turbulence Measurements

Recorded @ $x=13\text{m}, y=0\text{m}, z=0.75\text{ m}$ (3 cm below still water level)

Mean and RMS turbulence fluctuations for the three velocity components will be provided.

Recorded @ $x=21\text{m}, y=0\text{m}, z=0.77\text{ m}$ (1 cm below still water level)

Mean and RMS turbulence fluctuations for the three velocity components will be provided.

Recorded @ $x=21\text{m}, y=-5\text{m}, z=0.77\text{ m}$ (1 cm below still water level)

Mean and RMS turbulence fluctuations for the three velocity components will be provided.