

## 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.

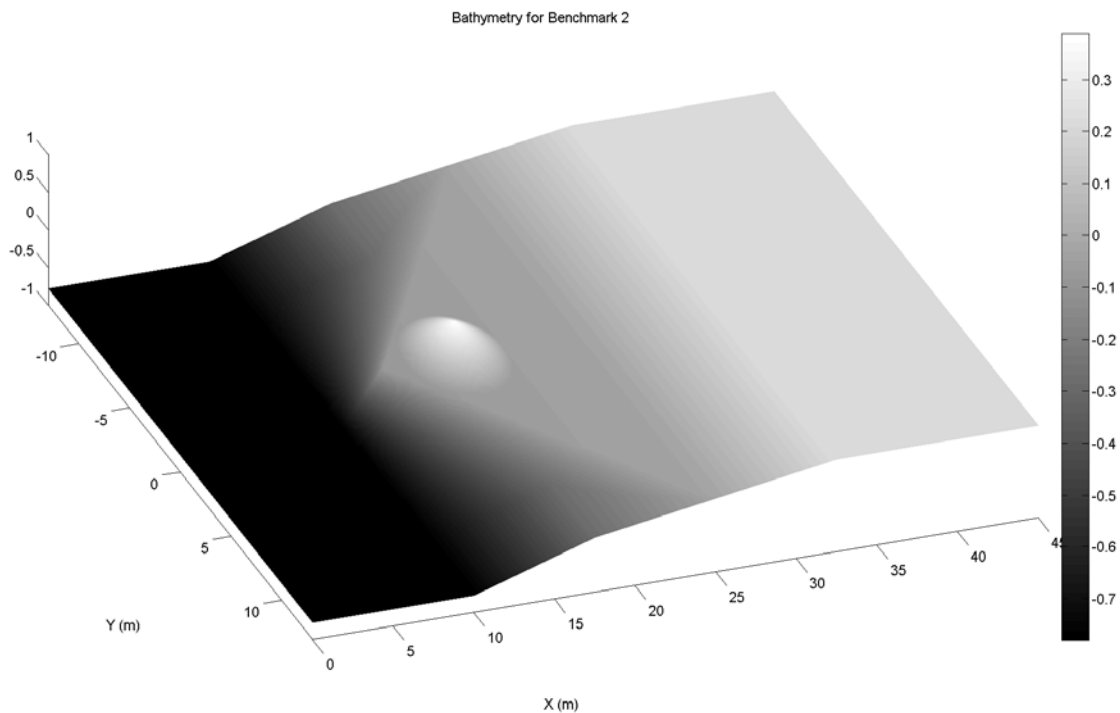
### SETUP:

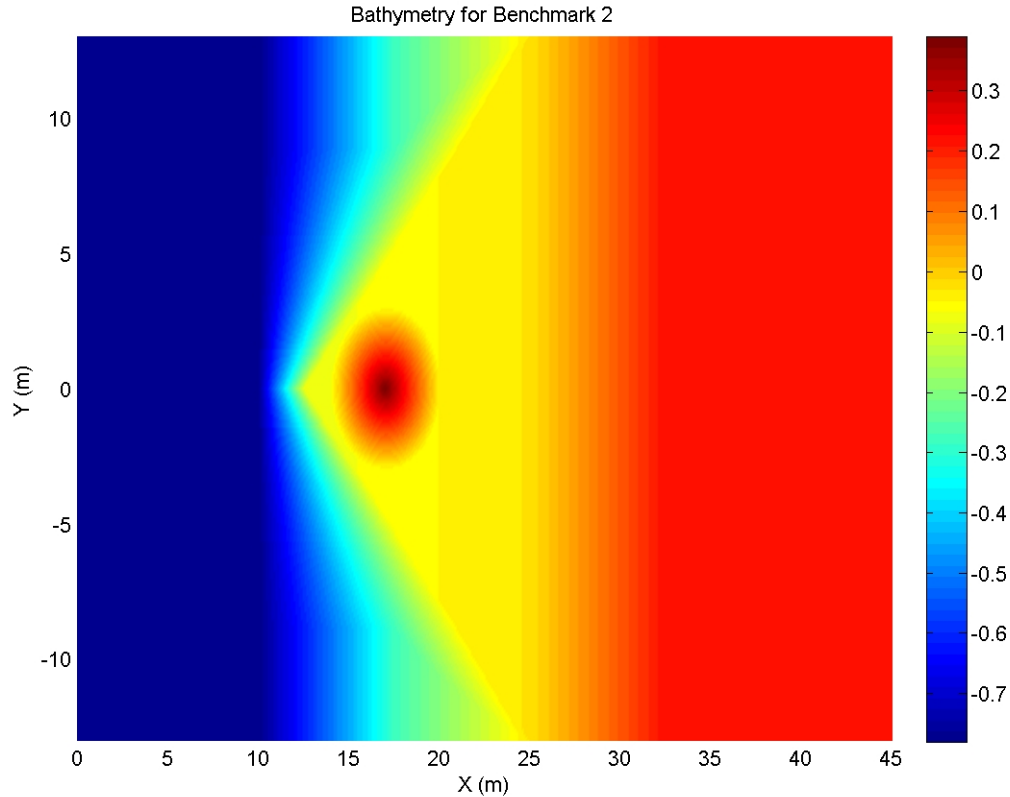
**Water depth @ Wavemaker:** 0.78m

**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.