

## SMS-303: Integrative marine sciences III.

### Lab 1, Waves.

Material: ADV, small and large fluid vessels, bucket with warm, cold and cold salty waters (each colored with a different food coloring).

Stations:

#### II. Buoyancy oscillations:

In a tall cylinder with salty/cold water on the bottom and fresh water on top you have a floating object parked between the fluids.



Kurt, Lindsay, Candyce and Anne initiate and observe buoyancy oscillations.

### III. Internal waves:

You have a small tank with a partition in the middle separating two fluids (cold and hot).

Q: What will happen when you raise the partition between the fluids?

Remove the partition. What is happening?



You have a large aquarium with a stratified fluid. Can you set up the internal mode?

Anne, Veronica, Kurt and Lindsay debate the issue.

### V. Waves on a sloping beach.

Large tank with paddle + current meter (ADV) attached to a computer.

A power supply is attached to the paddle allowing us to change its frequency. a. Q: How do you think the wave amplitude will change with the frequency of the paddle?



Laura, Amanda and Veronica discuss beach erosion and formation (left). Michael observe wave patterns in the wave tank.



It is always OK to disagree with your instructor! Nick and Emmanuel discuss buoyancy with Caroline acting as the referee.

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