# How Can We Relate Surfer Motion and Wave Characteristics Using Non-Dimensional Parameters?

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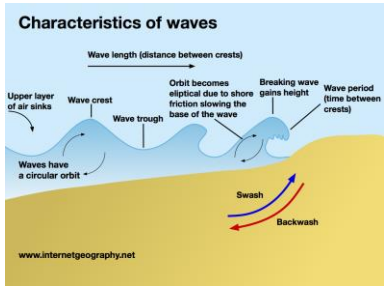
**Goal:** Measure wave characteristics and surfer motions simultaneously to establish a relationship between them.




## Required Sensors and Variables Measured

- Thetis instrumentation package (shown left)
- Lowell MAT-1 datalogger (shown below)
- HOBO water level gauge


- Surfer orientation
- Surfer acceleration/velocity/position
- Surfer direction and speed

- Wave height
- Wave period
- Wave direction

## Motivations

- Fosters understanding of the relationships between variables in a dynamic environment
- Not well understood or studied
- Want to understand how we can improve a surfer's ability to choose when to go surfing and when not

## Contributions to Society

- Contributes research to the coastal engineering and coastal dynamics fields on people's interactions with waves in the surf zone
- Allows us to understand the complex dynamics between floating bodies and waves in the surf zone
- We can extrapolate and predict surfer motions based on measured or predicted wave characteristics
- We can develop algorithms in the future to better score the "surfability" of given conditions