

UNF's Initial Attempt to Collect Wave, Current, and Wind Measurements on the Beaches of the GTM

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OUTLINE

- ▶ Motivation
 - ▶ Instrumentation
 - ▶ Mount installation & Instrument deployment
 - ▶ Data collected
 - ▶ Lessons learned
 - ▶ Future hopes
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

MOTIVATION

- ▶ Assist the GTMNERR in exploring the preliminary issues/challenges for establishing a long-term program to collect wave, wind, water level, current and survey data for use in the study of the dynamics of its natural beaches.
- ▶ Identify the source(s) of the now chronic 'hot spots' of erosion that threaten many beachfront homes in the area and how they might be effectively mitigated.
- ▶ Provide UNF's undergraduate Coastal Field Methods class with the opportunity to tackle a meaningful, potentially important issue in surf zone dynamics: The effects of the local wind on the direction and strength of longshore currents.

INSTRUMENTATION

- ▶ Nearshore (10 m depth) Acoustic Doppler Current Profiler (ADCP) to provide high-resolution directional wave spectra, current profiles, and water levels.
- ▶ Two Acoustic Doppler Velocimeters (ADV) to measure current speed and direction *in the surf zone*.
- ▶ Directional anemometer mounted to a 6 m tall pole installed at the top of the dune.



ADCP MOUNT



ADCP DEPLOYMENT



ADV PIPE INSTALLATION



ADV 'DEPLOYMENT'



ADV 'PLAN B' – TRIPOD DEPLOYMENT



ANEMOMETER INSTALLATION







+ ADV tripod (buried by longshore bar)

R032

+ ADCP

+ Anemometer + ADV pipe (vandalized)

R033

1994

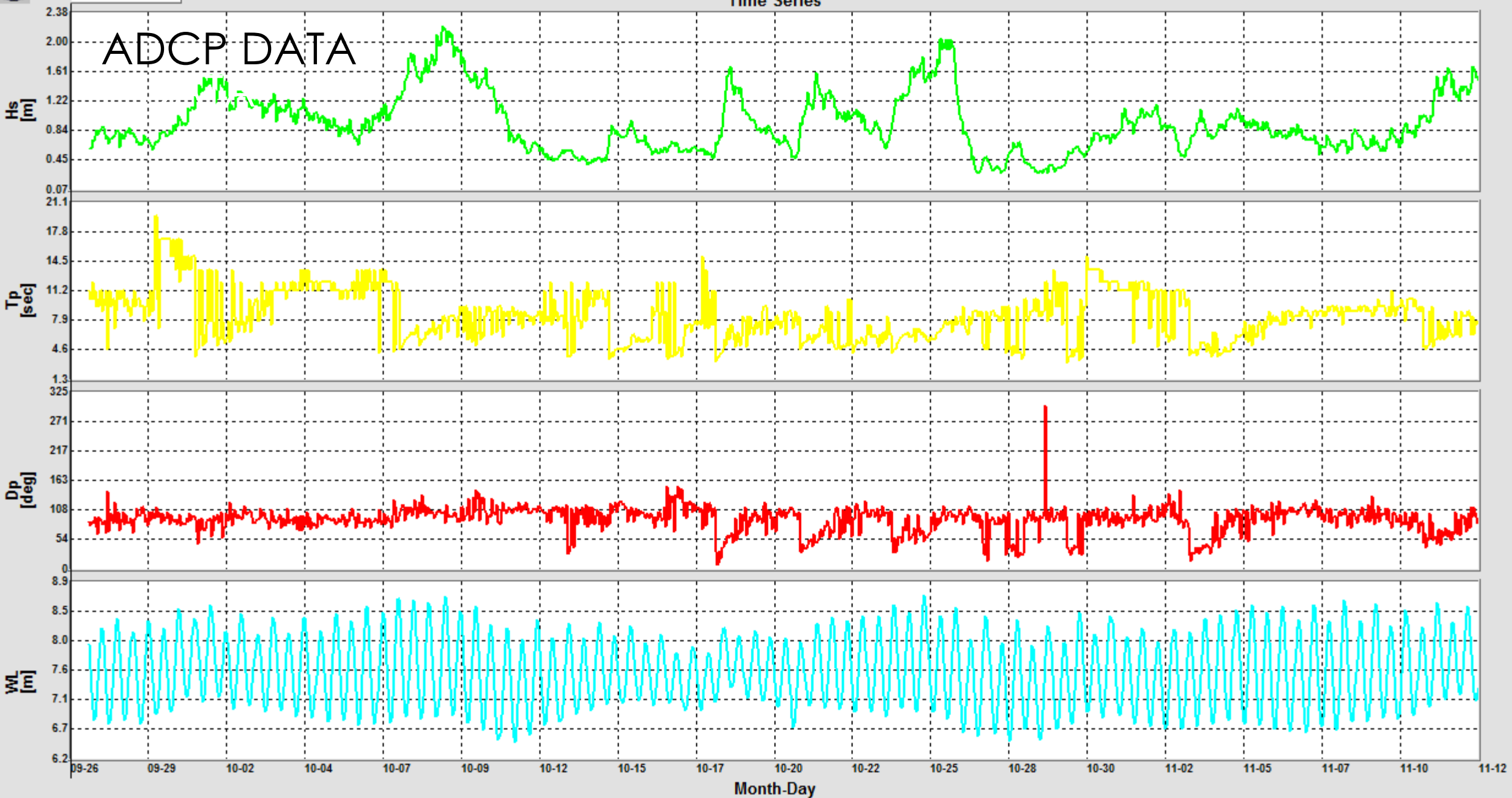
Imagery Date: 10/29/2017 30° 1.468' N



14:00 09/27/2018

Time Series

ADCP DATA

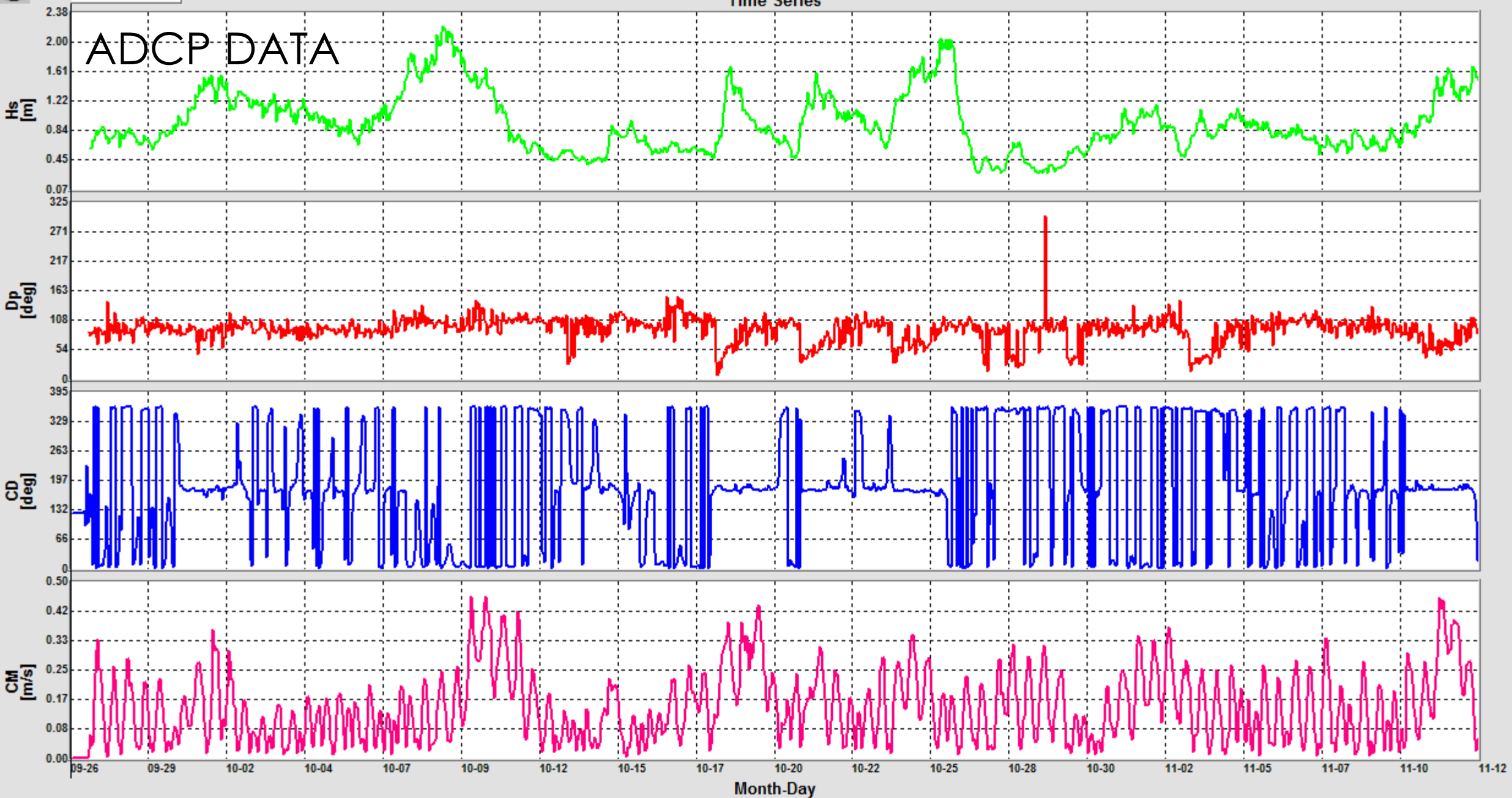




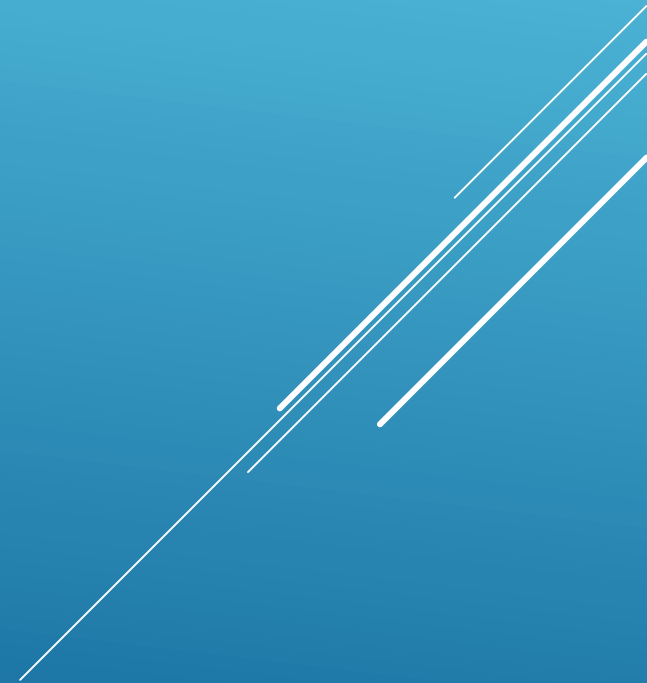
11:00 09/27/2018

Time Series

ADCP DATA



ADV DATA ?! (DARN VANDALS)



ANEMOMETER DATA ?! (DARN ELECTRONICS)

