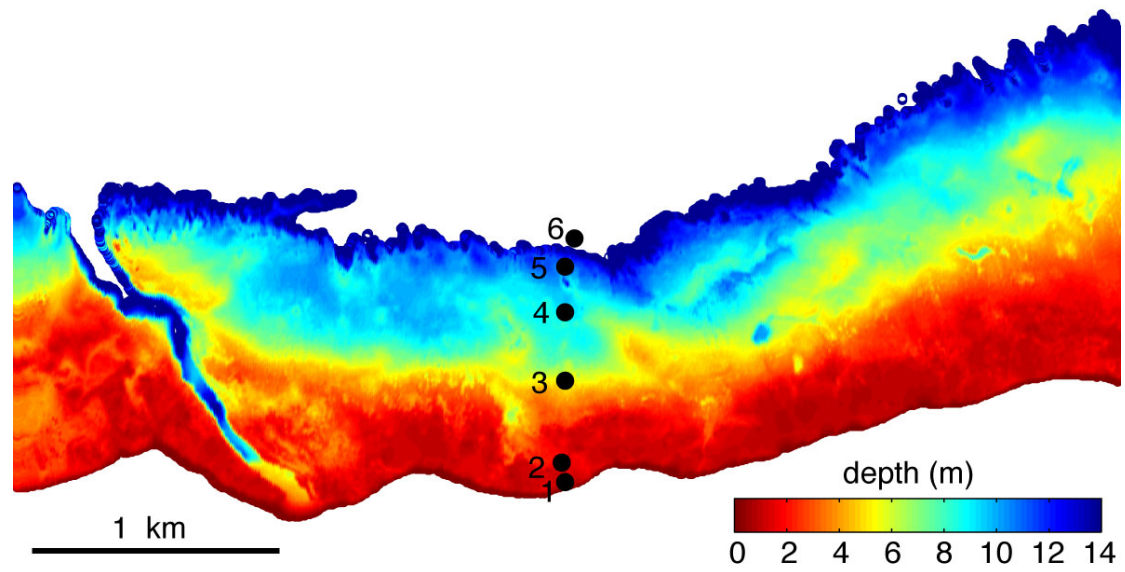# 1. Introduction

Figure 1. Map of Oahu, study site

2. Experiment

Figure 2. Mokuleia site photos.

Figure 3. Instrument Array


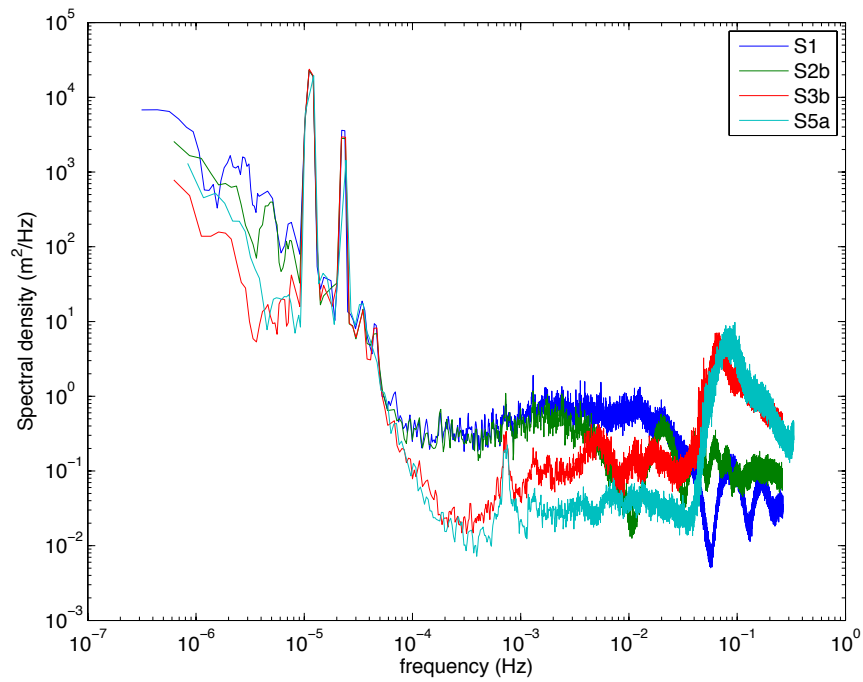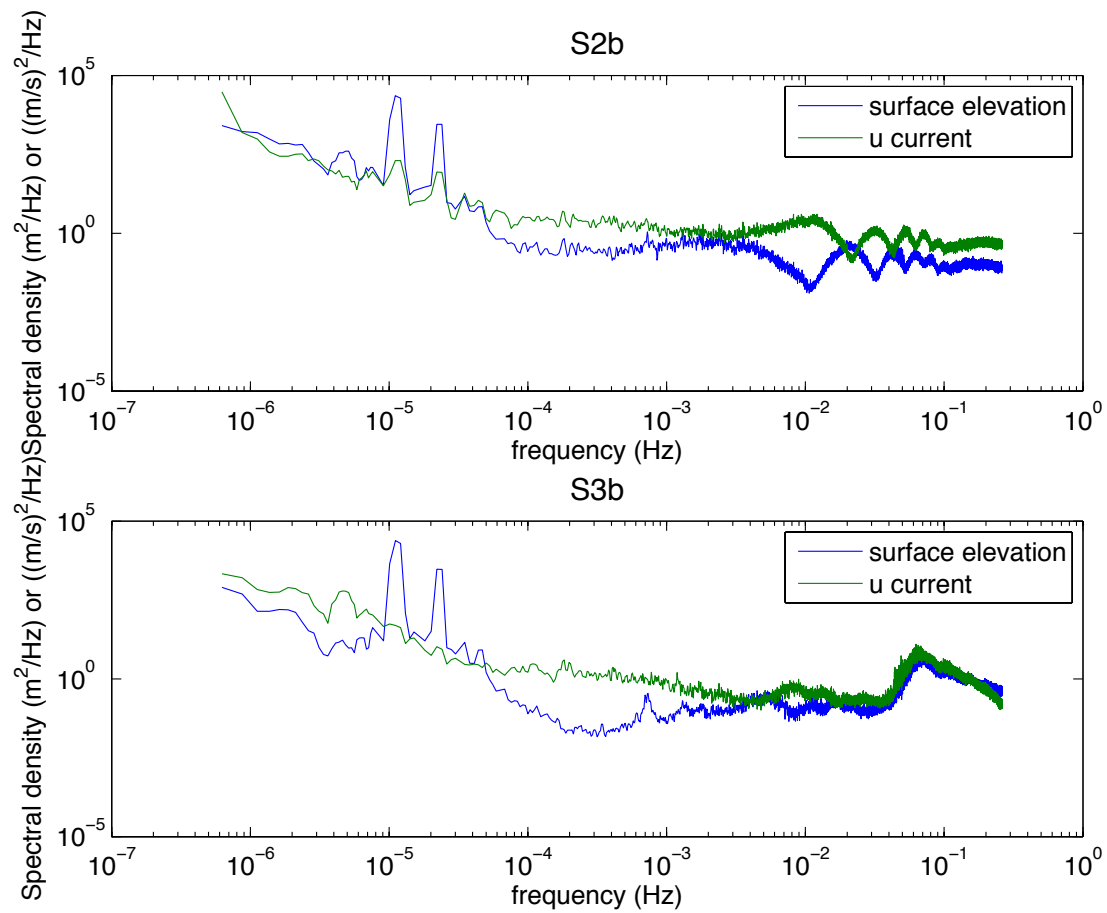| Location	Start	End	Depth	Sensor
S1a	12/14/07	3/15/08	1.3	SBE
S2a	12/14/07	1/9/08	1.74	AQD
S3a	12/14/07	1/9/08	5.90	AQD
S4a	12/14/07	1/9/08	9.64	AQD
S5a	12/14/07	1/17/08	11.95	SBE
S6a	12/14/07	1/9/08	19.9	AWAC
S2b	1/10/08	2/25/08	1.71	AQD
S3b	1/9/08	2/24/08	6.83	AQD
S6b	1/9/08	3/14/08	22.6	AWAC

3. Results

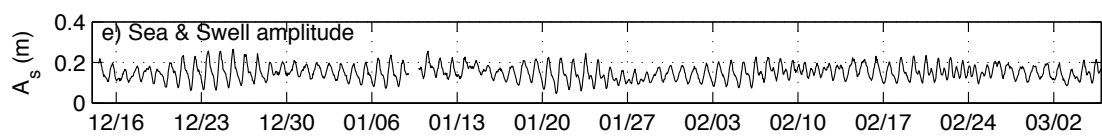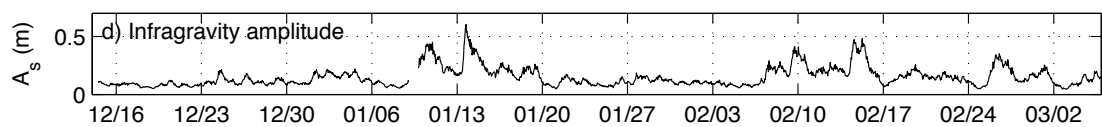### 3.1 Incident wave conditions

Figure 4. Incident swell time series

Significant Wave Height / Peak Wave Period / Wave Direction
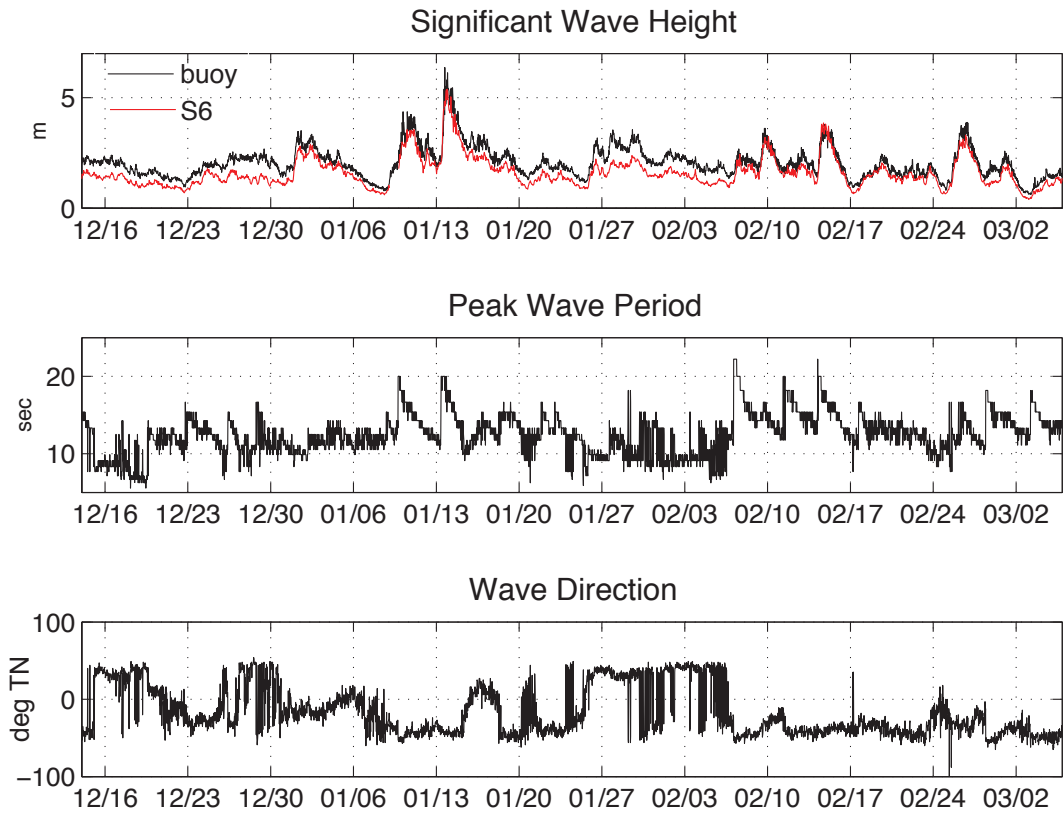
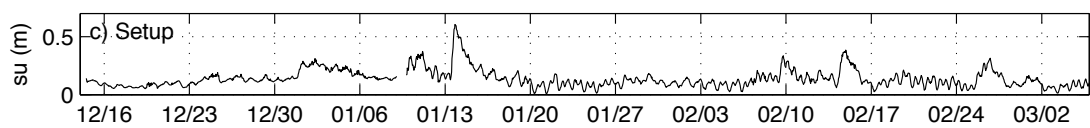## 3.2 Waves and Water Level on the Reef

Figure 5. Spectral transformation

S2b

S3b

3.3 Extreme water levels

a) Incident significant wave height

b) Extreme water level

c) Setup

d) Infragravity amplitude

e) Sea & Swell amplitude
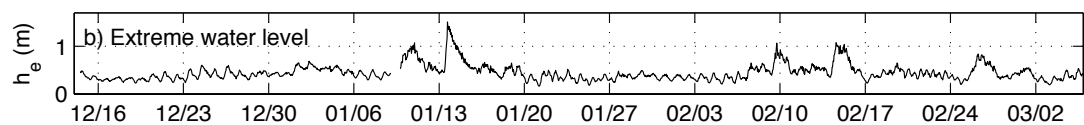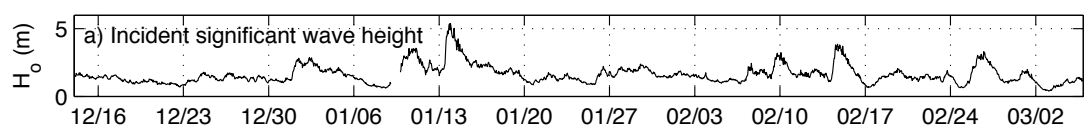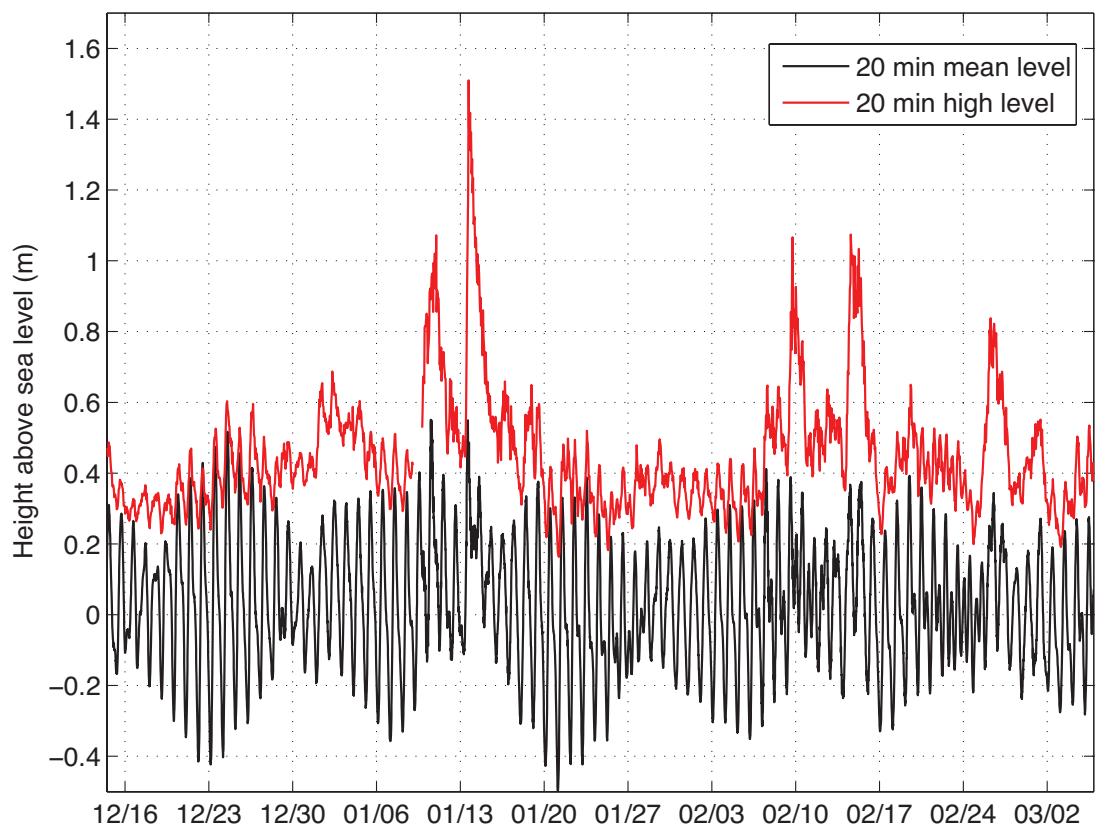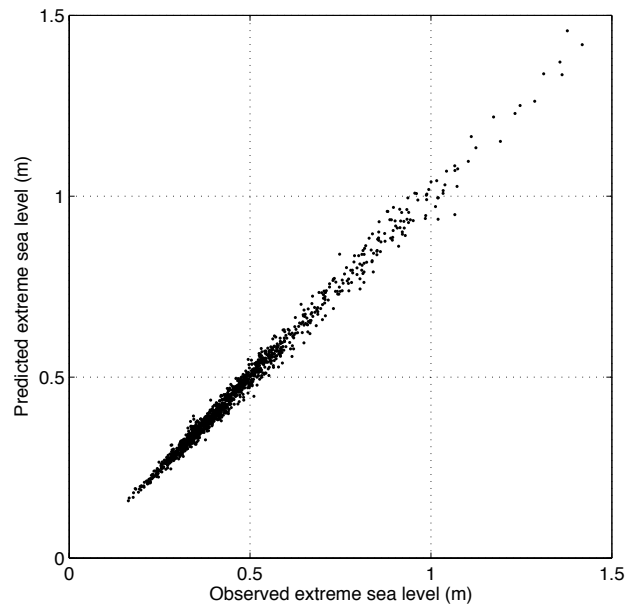
4. Predictions of Runup
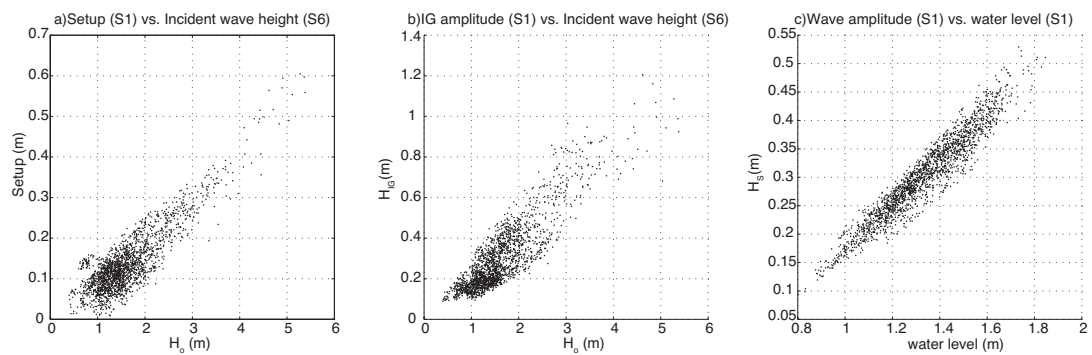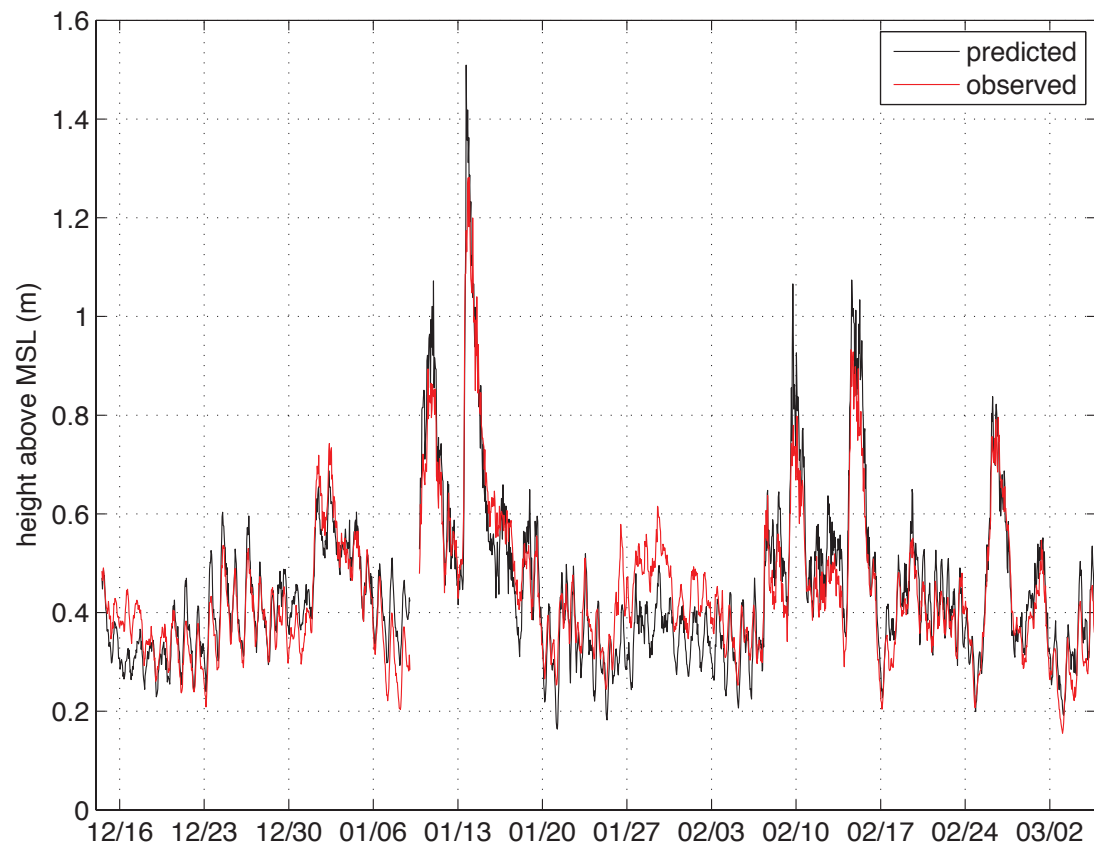

Figure 8. Extreme sea level vs su + std

Figure 9 observables vs forcing

Figure 10. Empirical model of runup

5. Summary and Discussion