

# Supporting Information for "Reef flat flow dynamics for a nearly closed fringing reef-lagoon: Ofu, American Samoa"

Samantha A. Maticka<sup>1,2</sup>, Justin S. Rogers<sup>1</sup>, C. Brock Woodson<sup>3</sup>, Ben Hefner<sup>3</sup>, and Stephen .G. Monismith<sup>1</sup>

<sup>1</sup>The Bob and Norma Street Environmental Fluid Mechanics Laboratory, Department of Civil and Environmental Engineering,

Stanford University, Stanford, CA, USA

<sup>2</sup>Geosciences Montpellier, Université Montpellier, CNRS, Univ Antilles, Montpellier, France

<sup>3</sup>College of Engineering, University of Georgia, Athens, GA, 30602, USA

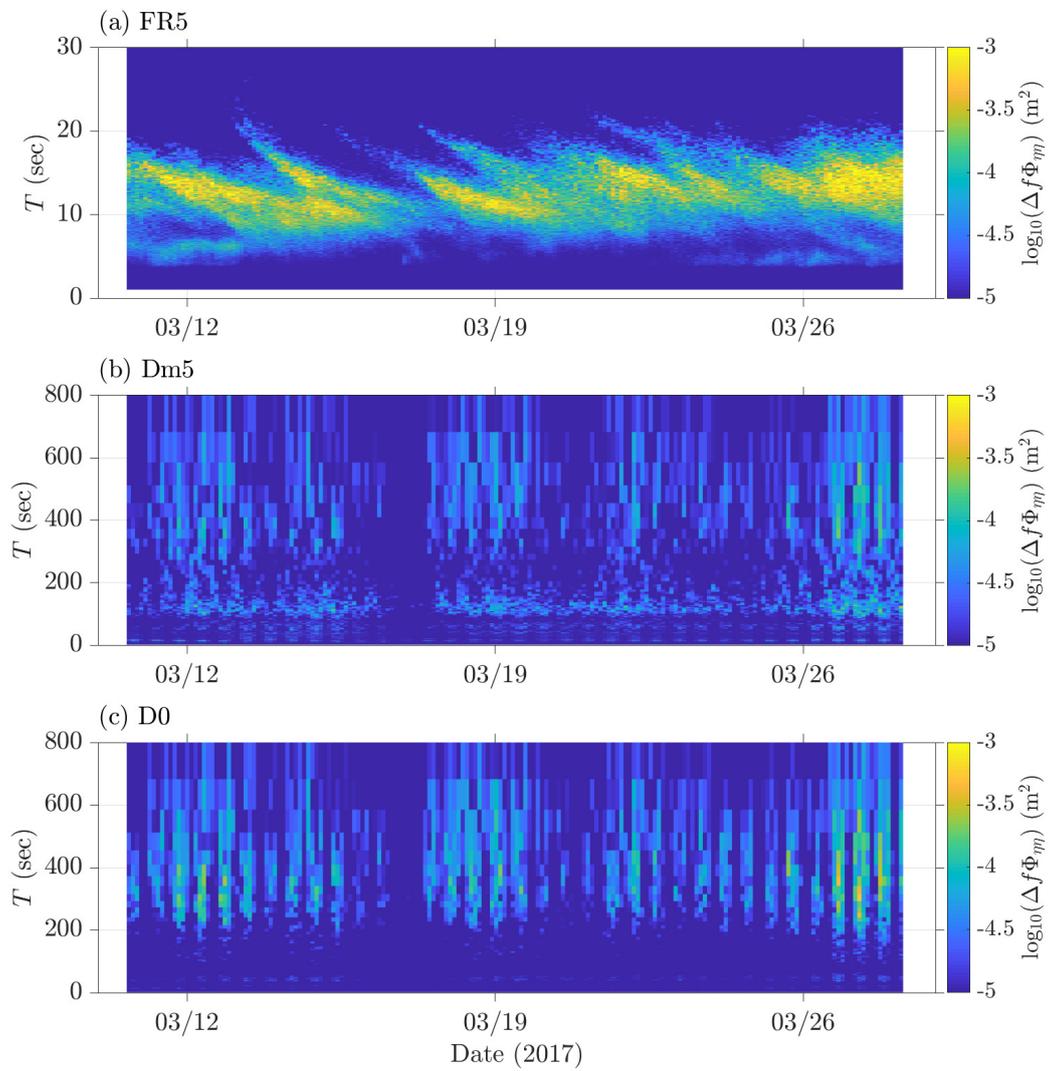
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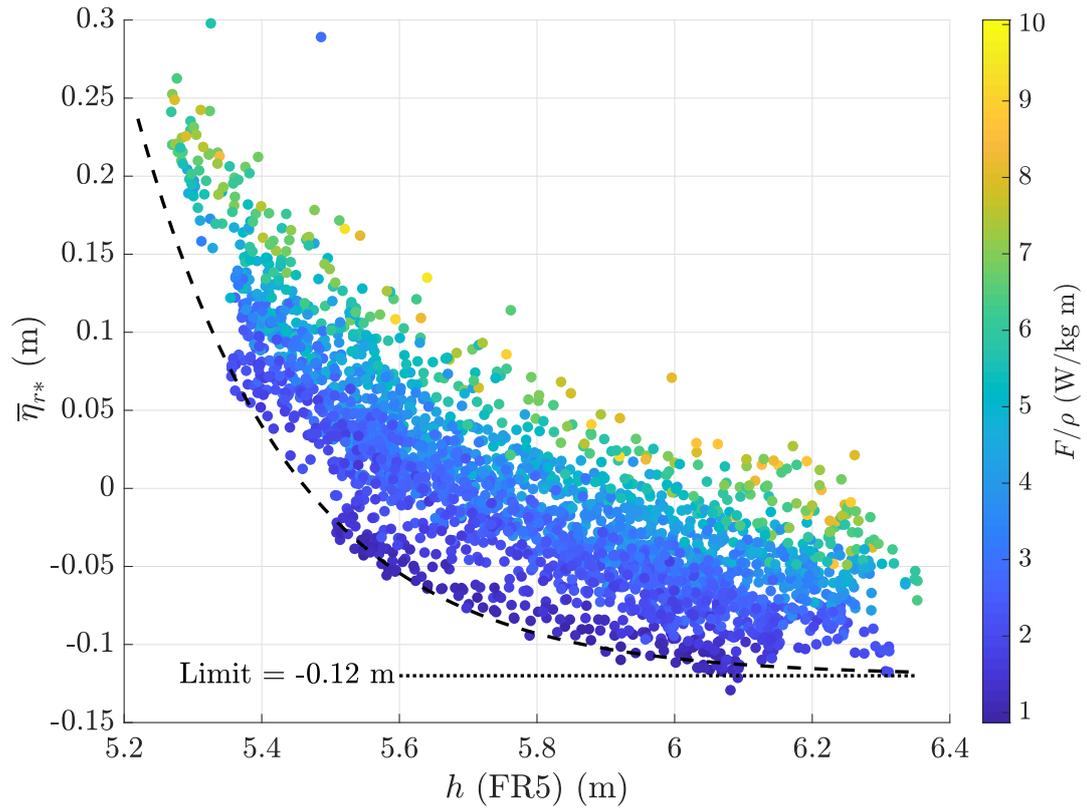
**Introduction** In this supplement, we include two figures showing: (a) wave spectra at 3 stations along the D transect (Fig. S.1) and (b) the calculated raw fore-reef setup  $\bar{\eta}_{r*}$  plotted as a function of water depth on the fore-reef and incident wave energy flux (Fig. S.2). The approach for using the data shown in Fig. S.2 to determine the offset to  $\bar{\eta}_{r*}$  required to compute  $\bar{\eta}_r$  is given in the main text.

## Figure S1.

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**Figure S1.** Wave power spectral density as a function of period,  $T$ : (a) FR5 ; (b) (D-5); and (c) lagoon (D0)). All have been multiplied by  $\Delta f$  to convert computed values to variance.



**Figure S2.**  $\bar{\eta}_{r^*} = \bar{\eta}_{Dm5^*} - \bar{\eta}_{FR5^*}$  plotted as a function of water depth on the fore-reef and incident wave energy flux. The dashed line shows an estimate of the lowest value of  $\bar{\eta}_{r^*}$  for any depth

**Figure S2.**