

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

Samantha A. Maticka^{1,2}, Justin S. Rogers¹, C. Brock Woodson³, Ben Hefner³, and Stephen .G. Monismith¹

¹The Bob and Norma Street Environmental Fluid Mechanics Laboratory, Department of Civil and Environmental Engineering,

Stanford University, Stanford, CA, USA

²Geosciences Montpellier, Université Montpellier, CNRS, Univ Antilles, Montpellier, France

³College of Engineering, University of Georgia, Athens, GA, 30602, USA

Contents of this file

1. Figure S1

2. Figure S2

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.

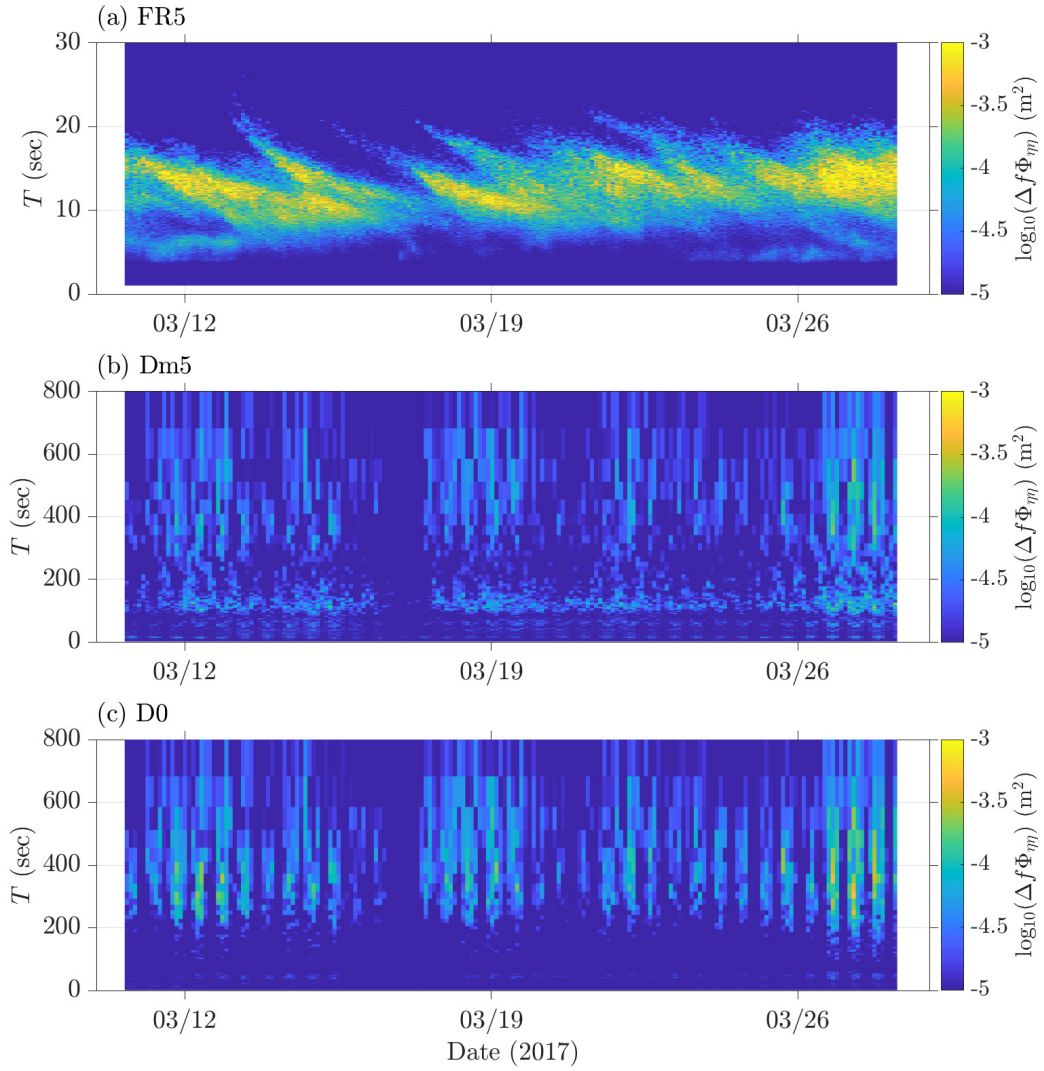


Figure S1. Wave power spectral density as a function of period, T : (a) FR5 ; (b) (D-5); and (c) lagoon (D0)). All have been multiplied by Δf to convert computed values to variance.

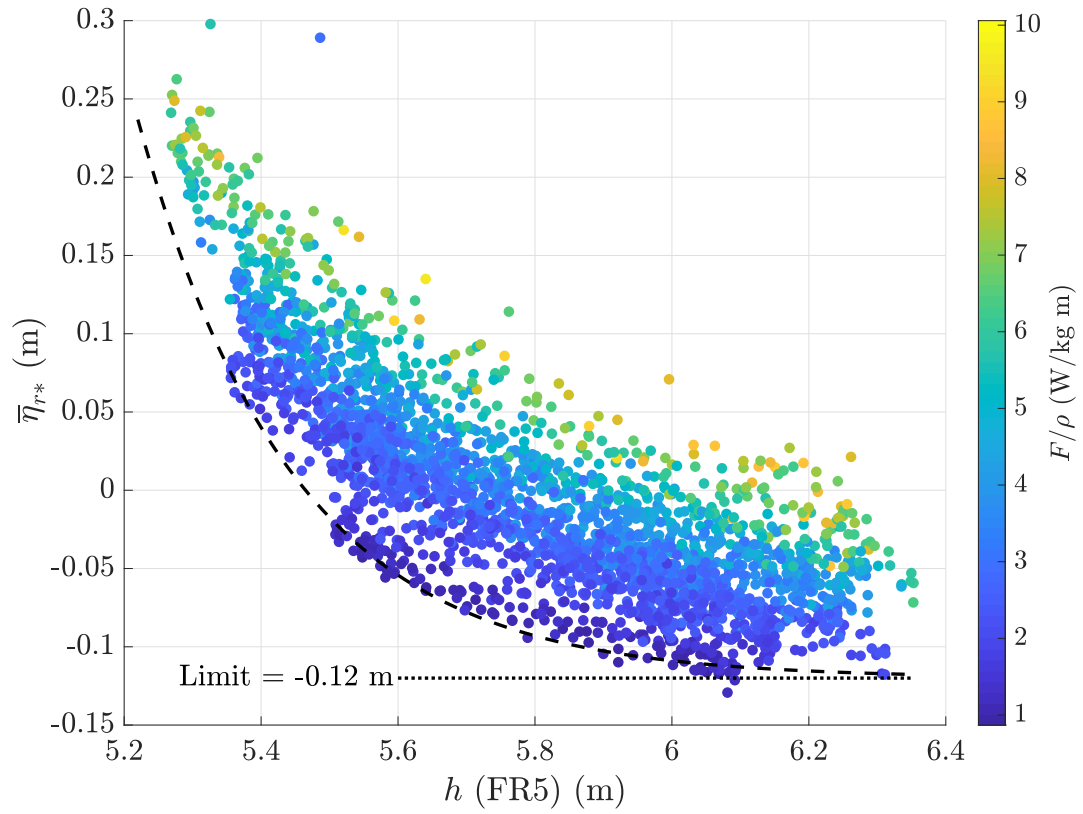


Figure S2. $\bar{\eta}_{r*} = \bar{\eta}_{Dm5*} - \bar{\eta}_{FR5*}$ plotted as a function of water depth on the fore-reef and incident wave energy flux. The dashed line shows an estimate of the lowest value of $\bar{\eta}_{r*}$ for any depth

Figure S2.