

Payo, A. and Muñoz-Perez, J.J., 2013. Discussion of Ford, M.R.; Becker, J.M., and Merrifield, M.A., 2013. Reef flat wave processes and excavation pits: Observations and implications for Majuro Atoll, Marshall Islands. *Journal of Coastal Research*, 29(5), 1236–1242. Coconut Creek (Florida), ISSN 0749-0208.

ABSTRACT

Ford, Becker, and Merrifield observed reef flat wave conditions during two deployments over a 41 day period to investigate the impact of reef flat excavation pits on wave processes at Majuro Atoll. They noticed that the shoreline with the excavation pit received wave heights slightly less (~8%) than those recorded at the nearby unmodified cross section. They suggested that this net decrease was the net product of a slight increase in sea and swell (SS) wave energy due to a bottom roughness reduction and a decrease in infragravity (IG) wave energy due to the disruption of the cross-shore quasi-standing modes caused by the excavation pit. We argue that, for this particular experiment, the coupling between the SS and IG energy waves may provide an alternative explanation of the observations, and we suggest that further investigations are needed. Although the coupling between SS and IG waves may be important for assessing the impact of excavation pits on IG-dominated shorelines, we show that these excavation pits in SS-dominated surf zones can lead to events such as the observed destruction of the Cadiz (SW Spain) seawall in 1792.

ADDITIONAL INDEX WORDS: Seawall erosion, shoreline erosion, beach processes, coastal zone management.