

Review of “The role of reef-dune systems in coastal protection in Puerto Morelos (Mexico)” by Franklin et al. This is my second review of this paper. I find the revised version much improved but still needing a few improvements prior to publication.

Specific comments:

1. Pg 4, top, “Wave information for a depth...” Please rephrase, as written it is unclear if the model output is written at a depth of 20 m offshore of the study site or at some other location.
2. Pg 4 line 7. As before, providing only R^2 does not describe model skill only how well the model reproduces variance.
3. Pg 4 line 9. Provide units for RMS errors and see my above comment re correlation coefficients.
4. Section 3, how many layers did you use in SWASH?
5. Section 3, description of roughness. Using the same Manning roughness for both the beach and reef is not ideal. You will either over/under-estimate the roughness at the beach/reef. Also the inverse depth dependence of Manning roughness would seem to have a strong impact on the very thin swash lens which accounts for much of your runup. I also don't agree you need CFD to account for roughness, there are quite a few papers that report C_d /roughness lengths for reefs/beaches.
6. Pg 6 line 18, I think this should be more than 0.01 not less.
7. Pg 6 line 22. Your definitions here are a bit inconsistent. On page 5 Z is defined as mean sea level. In fig 4 Z is the tidal level. Also in SWASH and as illustrated in fig 4 your model results are relative to the tidal level so what you are calling R^2 in fig 4 is actually R_{high} as defined in the text. Maybe just rephrase to say you calculate R_{high} from the model and R^2 is R_{high} minus the tide.
8. Pg 8. Line 6. Should be $R_{high} < D_{low}$
9. Page 9, first paragraph. I do not see the shift in the data at 30 m on the x axis. Maybe it would be more clear if you fit regression lines to the data and talked about the slopes. Also you are asking the reader to trust you about the steeper slope of the radiation stress curve and you suddenly bring up reflection from the reef crest. These are not trivial issues, esp reflection from the reef crest, if you are going to say this you need to show something that supports it.
10. The storm surge discussion reads as a bit of a bolt on, also I don't understand why you are using the surge and tide or just the tide. Wouldn't the tide only runs be the same as the previous 600 simulations?
11. Pg 11, line 7. I haven't read the Stockdon paper in a while but why are you excluding beach slope here?
12. Discussion section. I can't say I am a huge fan of the Stockdon comparison, it is not a surprise that a formulation developed on dissipative beaches doesn't work that great on reef but I guess I do see the value in showing it if it prevents one other person from assuming they can use the Stockdon formulation along a reef coast. It would be nice if the discussion section mainly put your results in a broader context. For example, many reef fringed coastlines are not backed by dunes of any significance (e.g. Pacific Islands) such that an increase in runup will be even more detrimental.