

## ***Interactive comment on “Statistical modeling of the long-range dependent structure of barrier island framework geology and surface geomorphology” by Bradley A. Weymer et al.***

**Anonymous Referee #2**

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The paper presents a novel tool that utilizes electromagnetic methods to determine the alongshore variability of framework geology in barrier islands. The authors apply this novel approach (EMI geophysical profiling) to Padre Island (Texas), which is mostly in its natural state (except Malaquite beach). The results confirm some previous work by some of the co-authors, which suggests that barrier island change is scale could depend of the underlying geology. In particular the presence of paleo-channels. The authors support this result with a statistical analysis that demonstrates scale dependency at the intermediate scales (~30km), which matches the spacing between paleo-channels.

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While the results are not surprising (as they confirm previous work by the authors), this manuscript is novel in its ability to integration electromagnetic, statistical, mapping and geomorphological methods. The paper is well written. In my opinion the manuscript is well suited for publication in Earth Surf.

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