

## ***Interactive comment on “Dating and morphostratigraphy of uplifted marine terraces in the Makran subduction zone (Iran)” by Raphaël Normand et al.***

### **Anonymous Referee #2**

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An interesting paper looking at marine terraces along a subduction zone margin setting along the Iranian coast. The approach to use marine terraces to quantify spatial and temporal patterns of surface uplift is a standard approach for neotectonic studies worldwide. Thus, the paper presents a localised / regional case study at best. There is some attempt to step back and look at other subduction zone marine terraces worldwide but this doesn't happen until the end of the Discussion. I wonder if the paper would have more impact with this subduction zone context as the pervasive thread through the paper meaning the work would have more impact and a broader international appeal than is currently couched.

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Some more technical points

1. DEM choice - TAN DEM data can be quite variable in quality since it is a new product. Some improved rationale as to why this dataset was used would be helpful. There are papers that test the visualisation and quantitative analysis of DEMs in geomorphology (Boulton and Stokes, 2018 Geomorphology) albeit for a fluvial audience.
2. Shoreline angles are critical for the uplift but the authors don't get to consider these until the methods. There should be marine terrace definitions and a clearer statement of shoreline angle significance earlier in the paper.
3. Shoreline angle erosion - there was no explanation as to how the shoreline angles were being eroded. Is it landslides and recessive cliff erosion by diffusion. needs clarification.
4. Mapping and stratigraphy - the paper text seems to be all about the dating when some much stronger text descriptions / statements about the field mapping, altitudes of the terraces, the relative stratigraphy of the terraces and the sediment sections are needed. The data is all in the (excellent) diagrams and yet the text description of this essential framework is lacking from the main body of the paper. It's as though you are leaving the reader to look at the figures and to sort it out themselves. Give the field framework a much stronger prevalence in the text.
5. Terrace tilting - this seems to be quite important for the uplift calculations and yet because the field description is lacking the tilting of the terraces raises questions about the uplift rate calculation and broader interpretation. The tilting (and the faults) need a stronger presence within the paper and some more careful explanation to demonstrate due care and attention.
6. Uplift rates - I couldn't get a sense of whether an uplift rate is high or low. My own published experience of marine terrace research from the Californian coast suggests to me that the Makran terraces here are giving very low uplift rate range values (min,

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max and mean). So, could the authors just qualify what they mean by low or high and be careful when talking locally, regionally or globally.

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