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# *Interactive comment on* "Rip current evidence by hydrodynamic simulations, bathymetric surveys and UAV observation" *by* Guido Benassai et al.

**Anonymous Referee #1**

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Dear Colleagues, I read your well-written and very informative contribution with great interest. It is really a solid piece of research based on several data sources and years of observations. As my special research focus is on remote sensing and especially on the use of drones as well as surveying, I will not comment on the hydrodynamic details of your contribution in large detail. Before going into details, I would like to mention that there is more potential in your UAS data than you showed here. With nicely geo-referenced UAS-data you obtain high quality 3D-data, which could be used far more, e.g. to obtain precise bathymetric data up to a few meters water depth (depending on seccii disk depth and the structure of the sea bottom). However, as this is not the focus of the paper I would just like to mention this. One of your key indications of the existence of rip currents are changes in the bathymetry. The differences showed in figure 3 reveal a significant wave pattern across the shoreline, which coincides nicely



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with the simulations (figure 4). However, it appears as if the spatial resolution of the underlying bathymetric data is not fine enough to really detect the rather small changes in bathymetry due to rip currents. I guess the dotted lines in figure 3 should represent the most probable position of the rip currents. Page 4, line 10ff. Please inform the readers in more detail about your bathymetric surveys, e.g. length and distance of survey lines and up to what water depth? Did you interpolate your transects in order to obtain a terrain or bathymetric model? If so, please indicate the accuracy and/or the point density. Page 6, line 2 georeferen(ing) Page 6, line 2 Just a question of interest. Did you also derive a terrain model from the shore and or a bathymetric model from the UAS data? Page 7, line 1 Please indicate the data source in the caption of your figure 3. BTW, what are the dotted lines? Page 8, line 25ff I am far from sure, if the data you are referring to is made from a satellite. Please bear in mind that a lot of the Google Earth data in Europe comes from airborne platforms, which means that you may be used aerial photos and or satellite data. This is of course not a bad thing, but please check. Page 11, line 1 Figure 7. Please mark the observed rip currents in the images (maybe with a little arrow), so they become clearer to the reader. Please also tell the readers, if the images you present are individual images of nearly the same spot taken over a short time or do they represent different parts of the before mentioned ortho mosaic? Page 11, line 2 In fact

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