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Ocean Science Discussions

Interactive comment on "Uncertainties in shoreline position analysis: the role of run-up and tide in a gentle slope beach" *by* Giorgio Manno et al.

Anonymous Referee #2

Received and published: 27 June 2017

Dear Editor I have carefully read the manuscript and I have general comments, specific comments and technical corrections.

General comments

This is an interesting research paper of wide interest because accuracy in determination of shoreline evolution is an issue of basic interest. The work is based on very different techniques as detailed field observations and measurements, use of aerial photographs and mathematical models.

Specific comments Pag. 4, I noticed this affirmation: Note that the offshore wave parameters were the only source in the propagation model SWAN, and wind, bottom

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Discussion paper

friction, and white-capping were not considered which are the implications of this? Could you briefly comment it?

Could you please give further information about the Boussinesq model you used? What about the approximation order? Last, I would mind to ask further information about the Lagrangian model used for the shoreline boundary conditions.

Pag. 4, lines 26-27, Not clear, please – if possible - give values such as Median, D50 and sorting. . ...I guess they are important parameters determining infiltration. . ... Pag. 13, line 11. . .which is the importance/implications of the presence of beach cusps? Pag. 13, lines 12-13. . .which are implications? Even this is NOT strictly related to the topic presented in your paper, I would mind you briefly comment on this topic and implications to your study: I guess cusps' presence can give rise to erroneous results, please consider the paper:

Giorgio Anfuso & Dan Bowman & Chiara Danese & Enzo Pranzini (2016) Transect based analysis versus area based analysis to quantify shoreline displacement: spatial resolution issues. Environ Monit Assess, 188:568

Pag. 15, line 14, change retreatment or advancement for erosion and accretion. . .. And change this and a retreatment rate close to the total uncertainty would not be constructive

for: . . .a retreat rate close to the total uncertainty would not be acceptable.

Technical corrections The quality of English is generally quite good but I have to propose small corrections.

Pag. 2, line 1, maybe is "must" and not "much". Pag. 2, lines 14 and 15, I suggest . . ."used DSAS to evaluate both positioning errors..." Pag. 2, line 17, Hunt is not in parenthesis, I guess. Pag. 2, line 20, I suggest:. . .. ."water propagation model. Tide effects. . ." Pag. 3, line 15, I suggest:. . ." four errors are related to " Pag. 4, line 29, I suggest. . ."especially houses emplaced too close to. . ." Pag. 4, line 30, I

suggest:. . .”destruction of dunes and their associated natural supply. . .” Pag. 5, Figure 1: I suggest:. . .”Mazzara del Vallo buoy, related to. . .” Pag. 5, line 6, I suggest, but not sure.....”details of expected results”. . ... Pag. 5, line 7, I suggest to say:. . .. . .”. . .by Holman and Sallenger (1985), and this is the case of this paper. Based on a high. . .. .” Pag. 6, line 16, . . .”from the buoy. . .” Pag. 7, line 6, ...to the field measurements and, for this reason, ...” Pag. 7, line 10, I suggest: Five orthorectified aerial images were used to assess time variations of the shoreline position during the 1994–2007 time span (Table 2).

Pag. 7, line 10, say: ..ground control points. . . Pag. 7, lines 14-15, this is not clear: For each of the five aerial surveys, an offshore wave condition was obtained by processing the measurements of the Mazara del Vallo buoy (Fig. 4) taken during the time period of the survey (Table 4).

I suggest: In order to reconstruct waves conditions at the day the aerial photos were made, data recorded from the Mazzara del Vallo buoy were analysed.

Pag. 10, is table 5? Pag. 11, Fig. 4, the letter “b” is missing. Pag. 15, line 13, . . .I suggest. . .”line estimation”. . .and:. . .”in situ run-up. . .”

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