

Interactive comment on “Coastline evolution of Portuguese low-lying sandy coast in the last 50 years: an integrated approach” by Cristina Ponte Lira et al.

Anonymous Referee #5

Received and published: 3 May 2016

General comments The paper presents an interesting approach about defining the shoreline evolution rate at a national scale. This topic and type of data is useful both for the scientific community and the coastal managers and planners. The text is easy to read and is well structured. In spite of the interest of the paper, there are some questions that need to be clarified (see specific comments below) before the paper publication.

Specific comments 1) Several times the authors refer that human interventions interfere with the coastal system, originating and maintaining a sediment deficit (page 1, line 20; page 9, lines 13 and 30). It is not clear to what kind of human interventions the authors are referring to. This should be clarified and some references to literature

C1

should be presented. 2) Related with point 1), are the authors considering that the coastal defense interventions are included in the causes of sediment deficit? Or were the coastal defense structures a response to the high rates of coastal erosion? In some coastal stretches the authors should identify the date of construction of coastal defense interventions and the shoreline evolution before and after these coastal works. It is not completely clear how the shoreline position is identified when a longitudinal coastal revetment (or groin) is present. 3) The authors can include a section where the temporal scale of analysis should be discussed. There are no reference of eventual storm waves attack to the dunes (and post storm recovery) and the impact that this may have on seasonal beach profile behavior. In several Portuguese coastal stretches it is presently difficult to identify the dune toe, where dunes are under erosion or were destroyed by man-made constructions. 4) At chapter 2, section 2.1 exists without a section 2.2. At the end of this chapter, it is suggested to be included a brief identification of the low-lying sandy coasts that are being analyzed by the authors. 5) At page 8 (line 23) there are references to artificial nourishments at only one Portuguese coastal stretch. References to other coastal stretches with beach nourishments should be added.

Technical corrections Page 2 (line 23): delete “?” Page 2 (line 24): Baptista et al (2014) can be added to the references: Beach Morphology and Shoreline Evolution: Monitoring and Modeling Medium-Term Responses (Portuguese NW Coast Study Site); Coastal Engineering Journal, Elsevier, 84: 23-37. Page 8 (line 19): clarify “. . .erosive trend with a +0.04. . .” Figure 1: What is the scale of each cell representation? Is it the same for all the cells?

Interactive comment on Earth Syst. Sci. Data Discuss., doi:10.5194/essd-2016-5, 2016.

C2