



## **Formation of crescentic bars in double sandbar systems.**

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The development of crescentic bars in multiple sandbar systems have been studied both through observations (e.g. Price and Ruessink, *Cont. Shelf Res.* 2011) and numerical studies (e.g. Thiebot et al., *Cont. Shelf Res.* 2012). Recent studies (Castelle et al., *Earth Surf. Process. Landforms* 2010; Quartel, *Earth Surf. Process. Landforms* 2009) have focus special attention on the dynamics of crescentic bars in multiple sandbar systems and their coupling. However these studies under with conditions the dynamics of the crescentic patterns are the results of a coupled dynamics or it is just the independent evolution of each single sand bar. The objective of the present work is to investigate under witch conditions the initial formation crescentic bars in a double sand bar system are the results of a coupled dynamics. Here we use a numerical model based on linear stability analysis to study initial evolution of the double sandbar system. The model, in addition the to processes accounted by Calvete et al. (2005) also incorporate the surface rollers, both in the hydrodynamics and sediment transport, following Ribas et al. (2011). Preliminary results shows that patterns can be coupled from their initial formation for particular forcing conditions and cross-shore beach profiles.