Natural Headland Sand Bypassing

Towards identifying and modelling the mechanisms and processes

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Natural headland sand bypassing: towards identifying and modelling the mechanisms and processes

ABSTRACT

This study contributes to the understanding of the mechanisms and processes of sand bypassing in artificial and non-artificial coastal environments through a numerical modelling study. Sand bypassing processes in general are a relevant but poorly understood topic. This study attempts to link the theory and physics of sand bypassing processes around headland and engineered structures which is significantly important in definition of coastal sedimentary budget. The main questions are how can we model sand bypassing processes and if the modelled sand bypassing processes represent the actual sand bypassing processes. In this study, it is shown that a process-based model can be used to simulate the processes of sand bypassing around groyne and headland structures. The morphological model developed in this study is useful to increase understanding of the natural sand distribution patterns due to combination of engineering efforts and natural coastal processes.

Keyword: Sand bypassing processes; Coastal environments