
(Source: RWS - RIKZ/AGI)

Feasibility of modelling steep slope nourishments

In the Southwest part of the Netherlands the tidal channel 'Oostgat' is located close to the coast. The channel is threatening the coastline. In the past groyne systems and beach nourishments were placed to manage the coastline. In 2005 an alternative nourishment was done at the steep channel slope in front of the beach. This pilot nourishment will be monitored thoroughly.

The Dutch ministry of Public Works asked Svašek Hydraulics to investigate the feasibility of a numerical morphological model to simulate the developments. Such model can be a suitable tool for the optimisation of future nourishment designs. Building a morphological model in this area with very complex processes is not an easy job. Such processes include tidal movement, waves and 3D processes around beachheads. On the steep slopes the grid resolution should be sufficiently high.

Svašek Hydraulics investigated several types of morphological models available on the market, like DELFT3D, MIKE, TELEMAC and FINEL. The latter one is developed by Svašek Hydraulics. It was concluded that in principle all these models can perform the job. In order to reduce computational effort it is recommended to focus on the numerical simulation of a limited area around the steep slope nourishment only with maximum emphasis on the relevant processes in that area.

Client
Rijkswaterstaat /RIKZ

Location
Oostgat, The Netherlands

Date
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Services
Model feasibility study

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