



The Need for high-resolution Downscaling in extreme Storm Surge Forecasts

J.W. de Vries, **G.J.H. Burgers**

KNMI, PO Box 201, 3730 AE, De Bilt, The Netherlands (Hans.de.Vries@knmi.nl)

A storm on 1 November 2006 caused the highest-ever recorded water level in Delfzijl in the North of country on the Eems/Dollard estuary. Although the forecasts for the surge were good for the remainder of the Dutch coast, the surge in Delfzijl was very severely underestimated.

Accurate storm surge forecasts are of vital importance for the coast of the Netherlands. To this end RIKZ and KNMI operate the WAQUA/DCSM storm surge model, a 2D model with a grid size of appr. 8 km which is driven with the 10 m wind and mean sea level pressure from KNMI's Hirlam model.

Both the atmospheric and the sea-state model use a Charnock-type drag relation. Near the coast, especially in the vicinity of estuaries, a detailed description of the land-sea transitions is important for an accurate storm surge forecast, even for a relatively coarse model like WAQUA/DCSM.

We use the 1 November 2006 case to illustrate the impact of a high-resolution land-sea mask, and the sensitivity to simultaneous change in the drag coefficient in the atmospheric and sea-state models.