



GLOFFIS and GLOSSIS: real-time, operational fluvial flood and storm surge forecasting at global scale

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Deltares operates two real-time forecasting systems with global coverage: the Global Flood Forecasting and Information System (GLOFFIS) and the Global Storm Surge Information System (GLOSSIS).

GLOFFIS produces fluvial flood forecasts with global coverage. The system ingests multiple weather forecasting products including ensemble NWP. These are used to force multiple hydrological models of various types and spatial resolutions. Data assimilation is applied for selected basins where observations are available in near real time.

GLOSSIS continuously provides 10 day water level and storm-surge forecasts using the Global Tide and Surge Model (GTSM). The GTSM is a numerical model based on Delft3D Flexible Mesh (FM), that computes tides and storm surges around the world efficiently and accurately through the use of an unstructured mesh. In GTSM version 3 the coastal resolution is up to about 1km, which is sufficient to capture the local coastal variability in many parts around the world.

Both systems are based on the Delft-FEWS forecast production system. Some results are disseminated via www.globalfloodforecast.com. In the presentation, some system characteristics as well as the rationale for forecasting at global scale will be highlighted.

Werner, M., Schellekens, J., Gijsbers, P., van Dijk, M., van den Akker, O., and Heynert, K.: The Delft-FEWS flow forecasting system, *Environ. Modell. Softw.*, 40, 65–77, doi:10.1016/j.envsoft.2012.07.010, 2013