



Modelling a storm surge event in Liverpool Bay with FVCOM.

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A model of the Irish Sea/Liverpool Bay area has been developed using the finite volume, unstructured mesh code FVCOM. The model has been run with meteorological forcing to simulate the storm surge event of January 2007. This event has previously been modelled with the POLCOMS code, the results of which were used for a comparison of accuracy and computational efficiency of the two approaches.

The wind speed (and hence wind stress) together with atmospheric pressure have been applied to the model as surface boundary conditions for a period of a few days to allow the model to settle down, and then the results for the peak of the storm on January 18th 2007 have been analysed to give metrics for the accuracy of the sea surface elevation that is predicted against measurements taken at Hilbre Island, near the mouth of the River Dee in Liverpool Bay. It was found that by changing the wind stress formulation within the FVCOM code a significant improvement in the accuracy of the model results could be obtained for the period of this surge event.