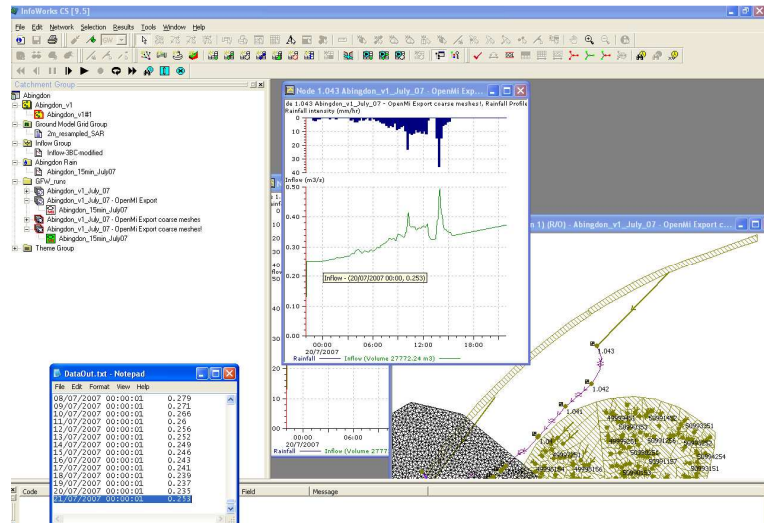


Integrated Modelling of Flooding from Catchment Run-off and Urban Drainage Using OpenMI

In the summer of 2007, the Oxfordshire town of Abingdon was hit by a flood which combined the effects of urban drainage and large scale surface run-off. Conventional models do not allow the urban drainage water flows to directly interact with the flows and water-levels in the receiving waters that they flow into.

Any interaction between them (such as blocked out-flows) has to be modelled by interactive running of the independent models. Therefore to correctly simulate the July 2007 summer floods there was a need to combine the sudden storm flows in the urban drainage system with the sudden stream flows coming down from upstream catchments into an integrated composition so that the models could influence each other as they began to produce results.



The composition successfully simulated the superimposition of the sudden drain flows into the river (the confluence of the River Ock with the Thames), demonstrated how the drainage system became prevented from flowing into the river and so caused local widespread flooding. This information has been utilised by the Environment Agency in developing its flood action planning for Abingdon. For many towns and cities in the UK the impact of a local storm is now recognised as a significant flood risk.

Keywords

Flood, Urban, Integrated, OpenMI, River, Drainage, Run-off, Abingdon.

For More Information

Please contact Roger Moore, Chair, OpenMI Association, rvm@bgs.ac.uk, <http://www.openmi.org>

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