

Groundwater flooding results in insurance claims exceeding £50 million each year within England and Wales. This type of flooding is predominantly caused by the rise of the water table above the land surface but its occurrence depends on the properties of the subsurface. Within the Oxford floodplain, complex interactions between surface water and groundwater, affected by urban infrastructure, have caused groundwater flooding in unexpected areas and resulted in significant damage to properties. To improve the understanding and simulation of flood generation within Oxford, two existing models, developed in isolation by two different organisations, have been coupled: a ZOOMQ3D groundwater flow model of the alluvial aquifer and an InfoWorks RS model of the Isis and Cherwell rivers. This has been achieved using the Open Modelling Interface (OpenMI), which enables the two models, operating on very different spatial and temporal scales, to interact. Preliminary results indicate that OpenMI technology can be applied for integrated surface water-groundwater modelling successfully. However, some limitations of the two models were identified during the process.