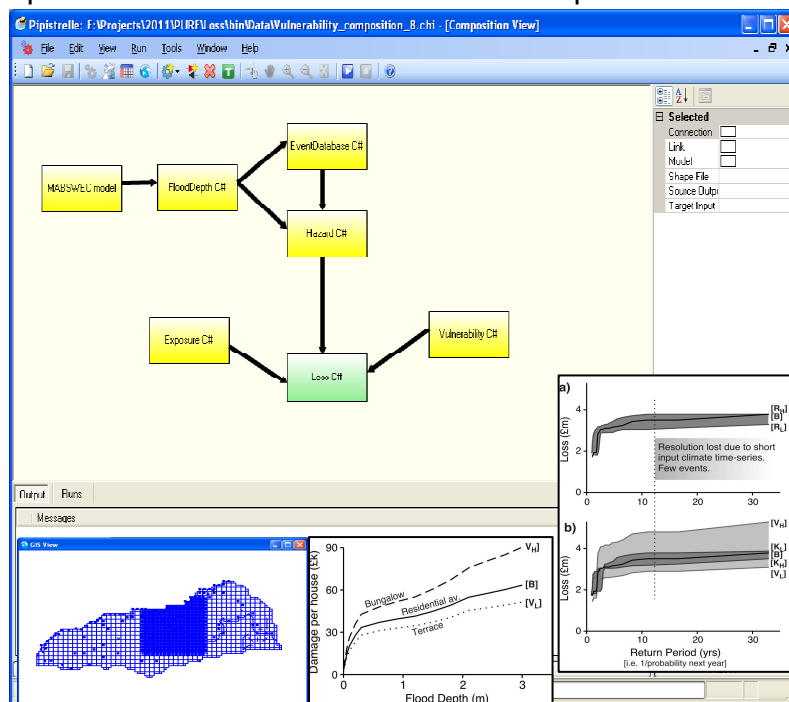


Applying OpenMI in producing a new generation of transparent and integrated catastrophe model

Catastrophe (CAT) models have been used to assess risk from natural catastrophes for the insurance industry of over 25 years. Most CAT models are commercially developed “black boxes” where the model’s quantification of risk is hidden from the user; now new financial regulations (Solvency II) require greater transparency in CAT models to help insurance firms to understand better the assumptions in the risk calculations.

Using a groundwater flooding model of the Berkshire Downs as an example, BGS and Loughborough University have used OpenMI to link the components of a CAT model for the



first time. the CAT model is broken down to multiple components, such as flooding event, hazard map, vulnerability, expose, and financial loss,

An OpenMI based integrated CAT model has been successfully developed to allow the groundwater model and the CAT model components to exchange data as they run, demonstrating that process-based environmental model can be linked to financial models for a better calculation of financial losses with great transparency. An uncertainty study based on this model has also shown that this 'plug and play' model will allow interchanging components provided by rival model vendors. Therefore, OpenMI can be used to efficiently and effectively build the transparent, understandable and flexible CAT models.

Keywords

Groundwater flooding, Catastrophe model, OpenMI, financial loss, Insurance.

For More Information

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