Geophysical Research Abstracts
Vol. 16, EGU2014-15822, 2014
EGU General Assembly 2014

Integrating an open source dynamic river model in hydrology modeling frameworks

Frank Liu (1) and Ben Hodges (2)

(1) IBM Research Austin, Texas, United States (frankliu@us.ibm.com), (2) Center for Research in Water Resources, University of Texas at Austin, United States (hodges@utexas.edu)

A challenge for hydrology modeling is linking landscape runoff models with river network models. Although some hydrological models directly implement a river routing scheme within their code, such a monolithic approach is too rigid because it does not allow the latest river routing advances to be used. Unlike the 2D interface between atmospheric and landscape models, the interface between landscape runoff models and river network models is more difficult to define. In this PICO presentation, we address problems with model interfaces, which are related to issues such as time and space-scale differences between the models. We also provide an overview of SPRINT, an open source river network model, which has adapted the model interface architecture and numerical methods widely used in semiconductor microchip design. Finally, we propose two model integration mechanisms: the file-based "net-list" and the API (application programming interface) approach.