



Gridification in Hydro-Meteorological Research: What It Is and Why We Need It?

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While computational hydro-meteorological research (HMR) requires the (chained) execution of various meteorological, hydrological, hydraulic, and impact models, it is of paramount importance to overcome the difficulties inherently associated with the consecutive execution of heterogeneous models and software. The difficulties are rooted in different execution environments, in organizational constraints, and in separate data formats and semantics. In order to gain the most benefit from HMR model chains, a Grid-based architecture has been proposed which facilitates a) the seamless coupling of the most important meteorological, hydrological, hydraulic, and impact models; b) the access to these models and related data across various administrative domains; c) the execution of the models on the most appropriate resources available. Historically, however, most HMR models are neither optimized nor prepared for a deployment on distributed computing infrastructures like Grids as for example provided by the European Grid Infrastructure (EGI). The process of adapting HMR models to Grid infrastructures is called “gridification”.

The talk will first define what gridification really means. Giving several examples we report on lessons learnt and best practices while gridifying HMR models in the DRIHM project. We also report on experiences gained upon gridification testing. Finally, we propose a gridification benchmark to determine the quality of the gridification process.