DRIHM Portal – A Scientific Gateway for Complex Hydro-Meteorological Simulations

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Hydro-meteorological simulations rely on complex, computationally intensive, simulation models. The accuracy of the simulation is strongly dependent on an extensive set of configuration parameters. Moreover, a full simulation (from rainfall to impact on urban areas) requires the execution of several models organized trough a workflow. This can lead to compatibility issues among different models.

DRIHM Portal is the scientific gateway developed by DRIHM project. It is able to support HM researcher in the design on new experiment. It expose a simple, web-based, UI that let the user to compose the desired workflow, then the user is driven trough parameter selection and job execution. The portal takes care of generating all the configuration files and handles the execution of simulation steps on a heterogeneous computing infrastructure composed by PRACE and EGI resources and on dedicated clusters.

A large effort in model standardization give the possibility to easily swap among analogous model within a workflow, and evaluate the benefit of different models or configuration parameters, thus speeding-up the HM research.

The portal is further evolving with a new set of user-driven requests: in-place analysis of simulation results and ability to share experiment with the HMR community as well as with citizen scientists.