

An e-Science platform for collaborative generation of knowledge and technology in hydrology, hydrogeology and water resources

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Abstract *SegHidro* is an enhanced grid computing platform that provides not only capabilities for the integration of computing resources, but also an environment for the sharing and integration of data, models and, ultimately, knowledge. The *SegHidro* platform provides support for: (i) the aggregation of computing and storage resources through the *OurGrid* peer-to-peer grid computing middleware; (ii) the sharing of data through the *OpenDAP* standard; (iii) the discovery of data and resources through *NodeWiz* distributed information service; (iv) the coupling of models through a workflow composition tool; and (v) a set of tools for improving the communication between researchers, the dissemination of scientific results and the sharing of best practices for the use, operation and evolution of the platform. The infrastructure is operational and several applications have already been developed by researchers and governmental water agencies in Brazil, including integration of atmospheric, hydrological, hydrogeological, hydraulic, agricultural and management models.

Key words grid computing; hydrological modelling