



Data, models, and views: towards integration of diverse numerical model components and data sets for scientific and public dissemination

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Data and models for describing coastal systems span a diversity of disciplines, communities, ecosystems, regions and techniques. Previous attempts of unifying data exchange, coupling interfaces, or metadata information have not been successful.

We introduce the new Modular System for Shelves and Coasts (MOSSCO, <http://www.mosso.de>), a novel coupling framework that enables the integration of a diverse array of models and data from different disciplines relating to coastal research. In the MOSSCO concept, the integrating framework imposes very few restrictions on contributed data or models; in fact, there is no distinction made between data and models. The few requirements are: (1) principle coupleability, i.e. access to I/O and timing information in submodels, which has recently been referred to as the Basic Model Interface (BMI) (2) open source/open data access and licencing and (3) communication of metadata, such as spatiotemporal information, naming conventions, and physical units. These requirements suffice to integrate different models and data sets into the MOSSCO infrastructure and subsequently built a modular integrated modeling tool that can span a diversity of processes and domains. We demonstrate how diverse coastal system constituents were integrated into this modular framework and how we deal with the diverging development of constituent data sets and models at external institutions. Finally, we show results from simulations with the fully coupled system using OGC WebServices in the WiMo geoportal (<http://kofserver3.hzg.de/wimo>), from where stakeholders can view the simulation results for further dissemination.