Geophysical Research Abstracts,
Vol. 11, EGU2009-4422-1, 2009
EGU General Assembly 2009

Run Environment and Data Management for Earth System Models

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The Integrating Model and Data Infrastructure (IMDI) developed and maintained by the Model and Data Group (M&D) comprises the Standard Compile Environment (SCE) and the Standard Run Environment (SRE).

The IMDI software has a modular design, which allows to combine and couple a suite of model components and as well to execute the tasks independently and on various platforms. Furthermore the modular structure enables the extension to new model combinations and new platforms.

The SRE presented here enables the configuration and performance of earth system model experiments from model integration up to storage and visualization of data.

We focus on recently implemented tasks such as synchronous data base filling, graphical monitoring and automatic generation of meta data in XML forms during run time. As well we address the capability to run experiments in heterogeneous IT environments with different computing systems for model integration, data processing and storage. These features are demonstrated for model configurations and on platforms used in current or upcoming projects, e.g. MILLENNIUM or IPCC AR5.