Geophysical Research Abstracts, Vol. 9, 08788, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-08788

Global and regional climate models in the ATMOS web-portal.

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The last five years are marked by a large number of works devoted to remote on-line computations, including those on basis of GRID-technologies. This is due to the fact that application programmers as well as specialists in a subject domain, on one hand, avail personal computers with required performance. On the other hand, they need additional competences, essential for working with clusters or with a distributed computation network. A standard way to facilitate clients' work is construction of middleware. An information system can be one of the entities to allow realization of the middleware (Gordov, 2006). Our work is devoted to one of such information systems.

This work describes the part of the accessible via Internet informational-computational system "Climate" (http://climate.atmos.iao.ru), which is oriented towards the computations within the framework of the regional meteorological models MM5 (Mesoscale Model 5) (Dudhia, 1993), developed in the USA National Center for Atmospheric Research, and WRF (Weather Research and Forecasting Model, http://www.wrf-model.org), which is a collaborative effort of NCAR, NCEP, FAA and many other organizations. The ICS "Climate" also provides access to the global climate model, developed by the Institute of Computational Mathematics RAS (Alekseev, 1998).

The developed information system is based on a four-level client-server architecture, which supposes that client's query is processed on the server, computations are carried out on the cluster, and client's input, output and intermediate data is stored on the database server.

The description of the interfaces that serve as a tool for the interaction between users and the models is given as well as the description of the client's actions sequence,

which in the mesoscale models typically includes four steps to input data:

1. Initialization of topography, landuse categories, vegetation data and other stationary geographical parameters for the model, including number of domains and vertical levels.
2. Initialization of stationary geographical parameters for each domain.
3. Data preparation to initialize meteorological fields and set boundary conditions; first guess interpolation onto the model grid.
4. Physical parameters initialization.

There is also a description of some features regarding the models compilation on the computational cluster and the following graphical depiction of the results, which is done using the GRADS package.

In the near future the working versions of the system will be installed additionally in the Tomsk State University (http://climate.atmos.math.tsu.ru) and Institute of Computational Technologies SB RAS in Novosibirsk (http://climate.atmos.ict.nsc.ru).

Acknowledgements

Basic part of this work was done with INTAS grant 00189 support. Its continuation is partially supported by SB RAS Interdisciplinary Project No 34 and RFBR grants 04-07-90219, 05-05-98010 and 06-07-89201.

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