



## **Webbased Experiments with Earth System Models of Different Complexity Used for Education on University Level**

**I. Kirchner** (1) and U. Cubasch (1)

(1) Institut für Meteorologie, Freie Universität Berlin

The WEKUW-system (Webbased experiments with climate and weather models) gives the students the opportunity, to work with typical earth system models without too much technical background. Normally an earth system scientist performs simulations with complex models on super computers. For doing so he needs in addition to the earth science background good skills in computational sciences and technical programming. These skills are missing by most of the meteorology students. Therefore the WEKUW-system will hide most of the technical tasks from the user. The system will build an application layer between the models and the user interface. The minimum technical requirements will be an internet connection and a webbrowser on the user side. The server will connect to all different models in an unique way and do the simulation uncoupled from the user login. For the models the webinterface allows to modify the model control parameters, to start the models and to analyse the results of each simulation. For each model a series of different experiments are available.

The user side of the server supports two roles, the tutor and the student. The tutor can control the education process of each student individually. He will switch the models on or off, unlock the experiments for the student and he can comment the experiment results of each student in the webenvironment. The student has access to documentation of each model and each experiment. He can start experiments which are unlocked for him. For each experiment type the user can store notes inside the webenvironment.

The WEKUW-system is used since 2003 for the training of meteorology students. At

the beginning the students will work with an Energy Balance Model (EBM) further on they will do experiments with a simple general circulation model (PUMA), with an aerosol chemistry transport model (RemCalGrid), with a complex global atmosphere model (ECHAM) and with a simple earth system model (PlaSim). There is no limitation for an extension of the system. Each new model can be implemented in a modular way.