

REQUEST FOR A SPECIAL PROJECT 2010–2012

MEMBER STATE: Germany.....

Principal Investigator¹: Prof. Dr. Joseph Egger.....

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Other researchers: Andreas Pfeiffer
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Project Title: Landsurface-Atmosphere Interaction
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If this is a continuation of an existing project, please state the computer project account assigned previously.	SP DE LSAI	
Starting year: <small>(Each project will have a well defined duration, up to a maximum of 3 years, agreed at the beginning of the project. For projects started before 2009, please state 2009 as the start year.)</small>	2002	
Would you accept support for 1 year only, if necessary?	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Computer resources required for 2010-2012: <small>(The maximum project duration is 3 years, therefore a continuation project cannot request resources for 2012.)</small>	2010	2011	2012
High Performance Computing Facility (units)	150	150	150
Data storage capacity (total archive volume) (gigabytes)	10	10	10

An electronic copy of this form **must be sent** via e-mail to: *special_projects@ecmwf.int*

Electronic copy of the form sent on (please specify date): 28. April 2009

Continue overleaf

¹ The Principal Investigator will act as contact person for this Special Project and, in particular, will be asked to register the project, provide an annual progress report of the project's activities, etc.

Principal Investigator: J. Egger.....

Project Title: Landsurface-Atmosphere Interaction

Extended abstract

Our group is focusing on aspects of the atmosphere's interaction with the underlying surface. The aim hereby is to better understand such processes as they appear in nature and their representation in numerical models. This should be helpful in the further development of the models.

The simulation of precipitation in summer still remains a problem and challenge in numerical weather prediction. One of the leading processes in the generation of convective rainfall resides in the interaction of soil moisture resp. evapotranspiration and moist convection.

Currently we are engaged in a project which deals with the hydrologic cycle. Within this project a sophisticated soil/hydrology/vegetation model will be coupled to a mesoscale meteorological model (MM5). Simulations of very high resolution with explicitly resolved moist convection will be compared to the results of coarser resolution runs that have to use convective parameterization schemes. Together with observations we will try to better identify and quantify the mechanisms in the soil-atmosphere interaction.

We hope to be able to improve models in order to get better quantitative results in summerly convective rainfall prediction. This is indispensable in driving hydrological models that are used to better understand the hydrologic cycle and to predict this cycle for example under a changing global climate.

For the above mentioned project we would like to use ECMWF data as initial and boundary conditions for our mesoscale models as well as for analysis and verification.

The results of this project should be helpful in improving numerical (weather prediction) models.

It is expected that Special Projects requesting large amounts of computing resources (500,000 SBU or more) should provide a more detailed abstract/project description (3-5 pages) including a scientific plan, a justification of the computer resources requested and the technical characteristics of the code to be used. The Scientific Advisory Committee and the Technical Advisory Committee review the scientific and technical aspects of each Special Project application. The review process takes into account the resources available, the quality of the scientific and technical proposals, the use of ECMWF software and data infrastructure, and their relevance to the Centre's objectives. - Descriptions of all accepted projects will be published on the ECMWF website.