SPECIAL PROJECT PROGRESS REPORT

Progress Reports should be 2 to 10 pages in length, depending on importance of the project. All the following mandatory information needs to be provided.

Reporting year July 2010-June 2011

Project Title: Analysis of land surface-atmosphere interactions through mesoscale simulations and dynamical downscaling of climate change scenarios

Computer Project Account: SPESMG06

Principal Investigator(s): Miguel Ángel Gaertner

Affiliation: Universidad de Castilla-La Mancha

Name of ECMWF scientist(s) collaborating to the project
(if applicable)

Start date of the project: September 2006

Expected end date: December 2011

Computer resources allocated/used for the current year and the previous one

(if applicable)
Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(units)	700000	0	700000	0
Data storage capacity	(Gbytes)	1000	0	1000	0

Summary of project objectives
(10 lines max)

The main objective of the proposal has been to perform dynamical downscaling of climate change scenarios with PROMES regional climate model. Our group is involved in several projects requiring long-period and high-resolution climate simulations. ECMWF computational facilities have been used to this effect until some time ago. Initially, we considered the possibility of performing at ECMWF facilities new high-resolution runs for generating climate change scenarios over Spain, and also some shorter-period runs. Due to the reasons explained below, these simulations finally have not been accomplished at ECMWF computers, and no new simulations are planned here.

Summary of problems encountered (if any)
(20 lines max)

Though the tests performed during 2009 with PROMES in the new supercomputer ("c1a") were positive regarding the speed-up of the simulations using large number of processors in parallel (up to 110), the computing cost also was much higher than initially estimated for the new planned long-period scenario simulations. These simulations have been performed instead in a different supercomputer, which has also the advantage of an easier and faster transfer of files to and from local computers than for ECMWF supercomputer. Additionally, PROMES model has undergone important changes, which would have required extra work to port the new version to ECMWF supercomputer. As indicated in the previous report, different simulations, adapted to the computing time limitations, were considered for the present period. Finally, these simulations have also been moved to the other supercomputer, due to its comparative advantages.

Summary of results of the current year (from July of previous year to June of current year)
This section should comprise 1 to 8 pages and can be replaced by a short summary plus an existing scientific report on the project

Due to the reasons explained above, no simulations have finally been performed in ECMWF computing facilities during the last 12 months. Consequently, no new results have been obtained during this period.

List of publications/reports from the project with complete references

Sánchez, E., R. Romera, M.A. Gaertner, C. Gallardo and M. Castro (2009): A weighting proposal for an ensemble of regional climate models over Europe driven by 1961-2000 ERA 40 based on monthly precipitation probability density functions. Atmos. Sci. Let. **10**, 241-248. DOI: 10.1002/asl.230

Summary of plans for the continuation of the project
(10 lines max)

The project is scheduled to finish at the end of present year. Due to the reasons explained above, no new simulations are presently planned for the remaining months.