



6-month progress report

Period: 1 September 2004 to 28 February 2005

RT4, prepared by Julia Slingo (UREADMM) on 14 March 2005

Status of milestones and deliverables due in this period:

Number	Date due	Description	Status
None			

Forecast status of milestones and deliverables due in next 6 months:

Number	Date due	Description	Forecast Status
D4.01	Month 12	Development of the RT4 Website	Completed (updates will continue throughout the project)
M4.0.1	Month 12	Workshop on RT4 key issues and research priorities, and specification of the RT4 coordinated experiments	RT4/RT5 Kick-off meeting in Paris (10-11 Feb 05). Another meeting planned for Sep 05.
M4.1.1	Month 12	Develop methods to explore climate feedbacks	Expected to be completed on time.

Summary of achievements in this period:

- A website for RT4 has been developed with links to the main ENSEMBLES website. It will become a forum for partners to exchange information and to communicate regarding progress and future plans.
(<http://www.cgam.nerc.ac.uk/research/ensembles-rt4/index.html>)
- The RT4/RT5 Kick-off meeting in Paris (10-11 February 2005) identified overlaps and links between the two RTs and ensured the coordination of their activities. It was a successful introduction to the status of work and future plans.
- Initial work on cloud-water and climate-carbon cycle feedbacks has started, in the context of the IPCC AR4, by various partners (CNRS-IPSL and Hadley Centre).
- Work on the identification of "climate surprises" has began (CNRM).
- Analysis of the effect of Euro-Asian snow-cover anomalies and climate variability modes of the Northern Hemisphere is in progress (NERSC).
- A preliminary assessment of the influence of the tropical SST on the extra-tropical, low-frequency variability modes has been performed (CERFACS, IfM-Kiel).
- An intermediate-complexity coupled model to investigate the statistical significance of inter-decadal variations and trends in teleconnections between tropical oceans and extra-tropical variability has been implemented (ICTP).
- An analysis of the impact of interactive SSTs on the simulations of the Indian summer monsoon and its variability has been initiated (INGV).
- Progress has been achieved in the study of some of the factors that influence El Niño in coupled models: a) the strength of the seasonal cycle (UREADMM);

- b) the mean state of the tropical Pacific (UREADMM); c) model resolution (INGV).
- The production of a global soil moisture and snow mass climatology (1986-1995) has been initiated in the framework of the Global Soil Wetness Project (GSWP).
 - Preliminary work on the behaviour of the Arctic sea ice cover and how it might be affected by climate change during the 21st century has started (CNRM).
 - The analysis of the effects of the 11-year solar cycle on the atmosphere (MPIMET) and of ocean heat uptake (NERSC) has been initiated.
 - A proposed design for the coordinated experiments has been developed by UREADMM and was discussed at the RT4/RT5 meeting in Paris in February.
 - A workshop on extremes has been held (5-8 March 2005) in Chateau D'Oex to discuss the statistical methodology that needs to be developed in WP4.3.
 - Several methods to identify circulation regimes have been tested (DMI). Paper submitted to J. Climate.
 - A case study of the European 2003 heat wave has been performed to assess the influence of the remote tropical forcing and the associated predictability (CERFACS).
 - Sets of different resolution 20th century atmospheric simulations are being performed (IfM-Kiel, CERFACS).
 - The 50-year NCEP/NCAR reanalysis dataset has been used to explore the vertical structure of circulations regimes (ISAC).

Summary of anticipated future problems and solutions (if any):

- Performance of the two ensembles of boreal summer's hindcasts by CNRM will depend on the ability to validate the soil moisture climatology needed for the boundary conditions.
- Access to external computer resources will be needed by ICTP for the production of large ensembles of coupled simulations.
- Due to funding problems, MPIMET is uncertain of the timing of new simulations to study solar-climate relationships, hence the analysis of these cannot be scheduled as yet.

Any issues to be raised with, or advertised to, other RTs:

- Availability of existing simulated datasets:
 - Availability of the PCMDI IPCC database to ENSEMBLES members in order to study a wider range of models.
 - Availability of data from PREDICATE.
- RT1-3 – It would be invaluable for the analysis if the modelling research themes could produce clear documentation on all the experiments they have designed and plan to run with a clear justification of how this design was decided upon.
- RT5 – Impossible for UREADMM (WP4.3) to lead deliverables 5.3 and 5.4 in first 18 months when receiving no person months funding. Suggest that either ECMWF or IPSL take over this role.
- WP5.3 – ECMWF activities in WP4.4 will only commence after month 18. However, some plans are already in place in collaboration with WP5.3.