



Project no. GOCE-CT-2003-505539

Project acronym: ENSEMBLES

Project title: ENSEMBLE-based Predictions of Climate Changes and their Impacts

Instrument: Integrated Project

Thematic Priority: Global Change and Ecosystems

Milestone M4.4.2: Assessment of seasonal-to-decadal variability and predictability in existing simulations to provide benchmark against which the new ENSEMBLES multi-model system can be judged

Due date of deliverable: February 2006
Actual submission date: 11 September 2006

Start date of project: 1 September 2004

Duration: 60 Months

Organisation name of lead contractor for this deliverable: CERFACS

Revision [draft 1]

| Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006) | | |
|---|---|----------|
| Dissemination Level | | |
| PU | Public | X |
| PP | Restricted to other programme participants (including the Commission Services) | |
| RE | Restricted to a group specified by the consortium (including the Commission Services) | |
| CO | Confidential, only for members of the Consortium (including the Commission Services) | |

Milestone M4.4.2: Assessment of seasonal-to-decadal variability and predictability in existing simulations to provide benchmark against which the new ENSEMBLES multi-model system can be judged

In month 1-24 of the ENSEMBLES project, almost all partners of WP4.4 have contributed to detailed assessments of seasonal-to-decadal climate variability and predictability with a clear focus on the North Atlantic European sector. These various contributions and other related works have been synthesized in an associated report written for deliverable **D4.4.1**. Some of these studies have been published (see list below) and the relevant papers are available from the authors for the interested reader.

Publications associated with the project (the names of the participants to the RT4-WP4 of the project are in **bold**):

1. Seasonal scale

Mark Rodwell and **Francisco J. Doblas-Reyes**, 2006: Predictability and prediction of European monthly to seasonal climate anomalies. *J.Climate*, **in press**

S. Conil, H. Douville and S. Tyteca, 2006: The relative influence of Soil Moisture and SST in climate predictability explored within ensembles of AMIP type experiments. *Climate Dynamics*, **accepted**

2. Decadal scale

M. Latif, M. Collins, H. Pohlmann, and **N. Keenlyside**, 2006: A Review of Predictability Studies of Atlantic Sector Climate on Decadal Timescales. *J.Climate*, **in press**

M. Latif, C. Böning, J. Willebrand, A. Biastoch, J. Dengg, **N. Keenlyside**, G. Madec and U. Schweckendiek, 2006: Is the thermohaline circulation changing? *J.Climate*, **in press**

Collins M., N. Botzet, A. F. Carril, H. Drange, A. Jouzeau, **M. Latif**, S. Masina, O. H. Otteraa, H. Pohlmann, A. Sorteberg, **R. Sutton and L. Terray**, 2006: Interannual to Decadal Climate Predictability in the North Atlantic: A Multimodel-Ensemble Study *J. Climate*, **19**, 1195-1203

3. Interaction with climate change

Doblas-Reyes, F.J., R. Hagedorn, T.N. Palmer and J.-J. Morcrette, 2006: Impact of increasing greenhouse gas concentrations in seasonal ensemble forecasts. *Geophysical Research Letters*, **33**, L07708, doi:10.1029/2005GL025061.

Caminade, C., and **L. Terray** 2006: Influence of increased greenhouse gases and sulphate aerosols concentration upon diurnal temperature range over Africa at the end of the 20th century. *Geophys. Res. Lett.*, **33**, L15703, doi:10.1029/2006GL026381

A great deal of work performed in the framework of the DEMETER (<http://www.ecmwf.int/research/demeter/>) and PREDICATE (<http://ugamp.nerc.ac.uk/predicate/>) European projects has also been used to realize this assessment summary. Please refer to the relevant publication list of the two previous websites and/or to the references listed in ENSEMBLES deliverable D4.4.1.

DEMETER and PREDICATE final reports:

Palmer, T.N., A. Alessandri, U. Andersen, P. Cantelaube, M. Davey, P. Délecluse, M. Déqué, E. Díez, F.J. Doblas-Reyes, H. Feddersen, R. Graham, S. Gualdi, J.-F. Guérémy, R. Hagedorn, M. Hoshen, N. Keenlyside, M. Latif, A. Lazar, E. Maisonnave, V. Marletto, A. P. Morse, B. Orfila, P. Rogel, J.-M. Terres, M. C. Thomson, **2004**. Development of a European multi-model ensemble system for seasonal to inter-annual prediction (DEMETER). *Bulletin of the American Meteorological Society*, **85**, 853-872

Sutton R.T et al. 2003: Mechanisms and Predictability of Decadal Fluctuations in Atlantic-European Climate. *Final report of the PREDICATE project*. (http://ugamp.nerc.ac.uk/predicate/FinalReport/predicate_final_report_section5-6.pdf)