



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

Deliverable 1.7: Interim probability distribution of transient climate change over Europe will be produced, for use by other RTs in testing methodologies for prediction of climate change impacts

Due date of deliverable: Month 24
Actual submission date: September 2006

Start date of project: 1 September 2004

Duration: 60 Months

Organisation name of lead contractor for this deliverable: METO-HC

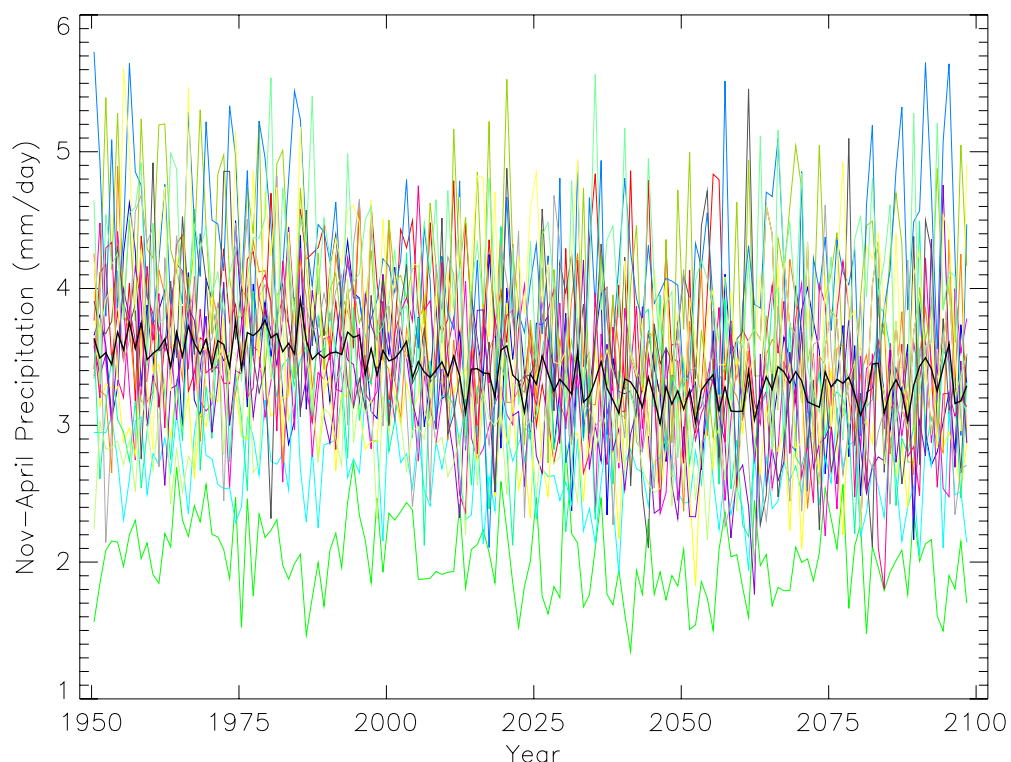
Revision [1]

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	X
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)	

The substantive component of this deliverable is the transfer of data from one partner (METO-HC) to two other partners (ECMWF and the Finnish Environment Institute, SYKE).

Provision of GCM Output to Drive a Malaria Model

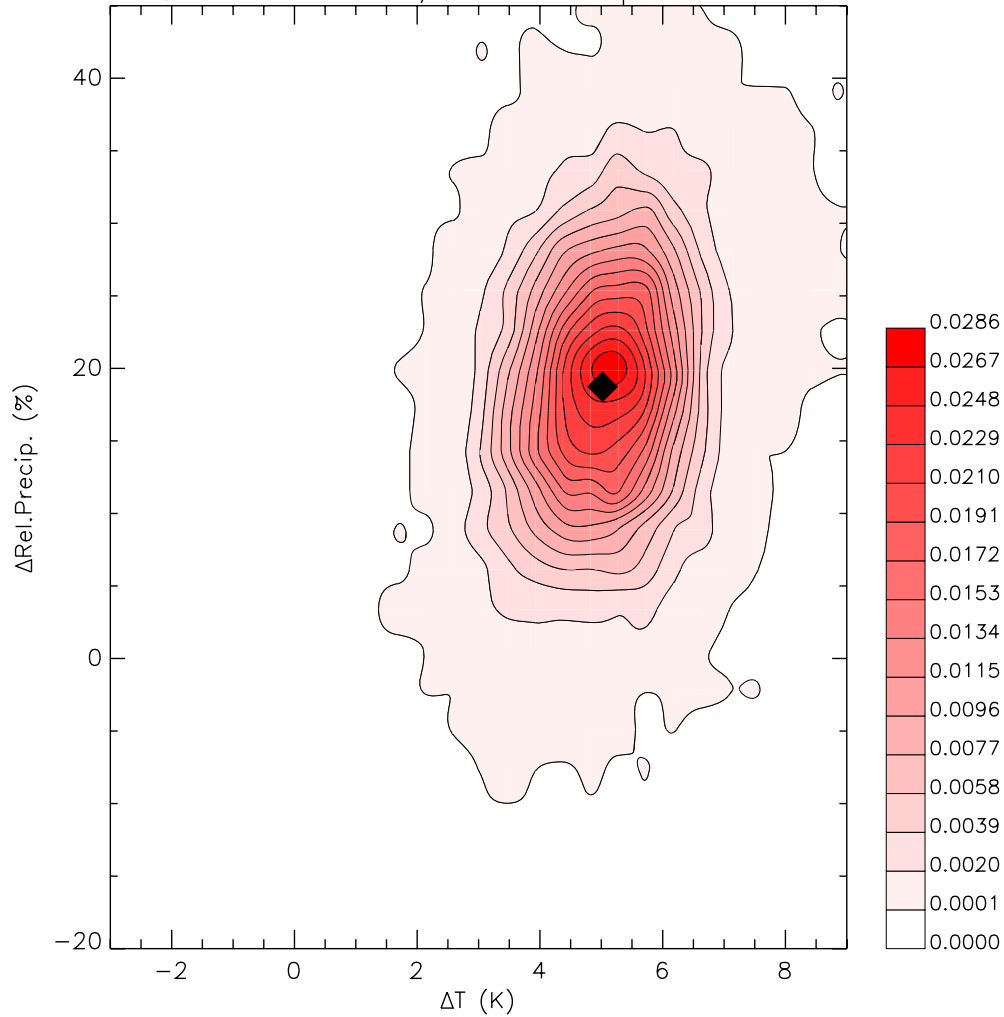
The figure shows time series of precipitation averaged in the region of Botswana from 17 Hadley Centre model experiments in which perturbations were introduced to parameters that control atmospheric climate feedbacks. These experiments form part of the first generation ENSEMBLES prediction system and will be used by ECMWF to quantify uncertainties in the likelihood of future Malaria outbreaks. The experiments are similar to those described in Collins et al. (2006).



Provision of Interim PDFs of Climate Changes in Lapland

The figure shows an interim joint PDF of changes in temperature and relative precipitation in the region of Lapland for the period 2080-2100 under the A1B scenario. The PDF is computed using a 129 member perturbed physics ensemble of atmosphere-mixed layer experiments, time-scaled using equivalent HadCM3 transient model experiments (above). The method is described in detail in Harris et al. (2006).

The PDFs are not representative of the full range of uncertainties as (i) they do not sample the complete range of parameters in HadCM3, (ii) likelihood weighting has not been applied and (iii) the effect of structural uncertainties in models has not been taken account of. These will be the subject of further research.



References

Collins, M., B.B.B. Booth, G. Harris, J.M. Murphy, D.M.H. Sexton and M.J. Webb, 2006, Towards quantifying uncertainty in transient climate change. *Clim. Dynamics*, 27 (2-3) 127–147.

Harris G.R., Sexton D.M.H. , Booth B.B.B., Collins M., Murphy J.M., Webb M.J., 2006, Frequency distributions of transient regional climate change from perturbed physics ensembles of general circulation model simulations. *Clim. Dynamics*, 27 (4): 357-375.