



European Commission's 7th Framework Programme
Grant Agreement No. **226520**

Project acronym: **COMBINE**

Project full title: **Comprehensive Modelling of the Earth System for Better
Climate Prediction and Projection**

Instrument: Collaborative Project & Large-scale Integrating Project

Theme 6: *Environment*

Area 6.1.1.4: *Future Climate*

ENV.2008.1.1.4.1: *New components in Earth System modelling
for better climate projections*

Start date of project: 1 May 2009

Duration: 48 Months

Milestone Reference Number and Title:

M3.2: Multi-model ensemble of hindcasts from stratospheric-resolving ESMs

Lead work package for this milestone: WP3

Organization name of lead contractor for this milestone:

Due date of milestone: month 24 (30 April 2011)

Actual submission date: 29 April 2011

M3.2: Multi-model ensemble of hindcasts from stratospheric-resolving ESMs

The M3.2 milestone concerns the realization of ensemble hindcast simulations with the new stratosphere – resolving high-top model systems. The hindcast simulations are the historical CMIP5 simulations for the period: 1860-2005 (Table 1). The forcings used are listed in Table 3 of Deliverable 3.1.

The Milestone has been reached in the sense that the historical experiments have been completed and model data produced. All the five high-top coupled atmosphere-ocean-sea ice models have successfully completed the hindcast simulations. A detailed analysis of stratosphere-troposphere dynamical feedbacks in the historical simulations will be reported in deliverables D3.2 (month 30) and D3.3 (month 36).

Partner	CMCC	CMCC	CNRS	METO	DMI	MPG
Model	CMCC-CMS	CMCC-CESM	IPSL-CM5	HadGEM2	EC-EARTH ²	MPI-ESM
Period (# of realiz.)	1850-2005 (1)	1850-2005 (1)	1850-2005 (5)	1860-2005 (1) 1960-2005 (2)	1850-2005 (1)	1850-2005 (1)
Low-top (# of realization)	-	Ongoing ¹	-	1860-2005 (1) 1960-2005 (2)	1850-2005 (2)	-
AMIP (# of realiz.)	1950-2005 (2)	-	1850-2005 (5)	Planned ³	1979-2008 ⁴ (2)	1979-2008 (1)

1 The low-top version of the model is run for the same period as the high-top

2 It is discovered after all the simulations were completed, that the volcanic aerosol effects were not included in the model simulations due to a bug in the EC-Earth model system. New simulations with the bug corrected have been planned and will be carried out later this year (2011).

3 Only low-top version.

4 There are also two AMIP simulations for the low-top version.

Table 1. List of the hindcast model simulations performed with the high-top models participating to WP3. For completeness, details on the performed (or ongoing) AMIP simulations have been added. Please note that the CMCC model is used in two settings: the CMCC-CMS and the CMCC-CESM. See deliverable 3.1 for details.