PRIMAVERA

PRocess-based climate sIMulation: AdVances in high-resolution modelling and European climate Risk Assessment

www.primavera-h2020.eu

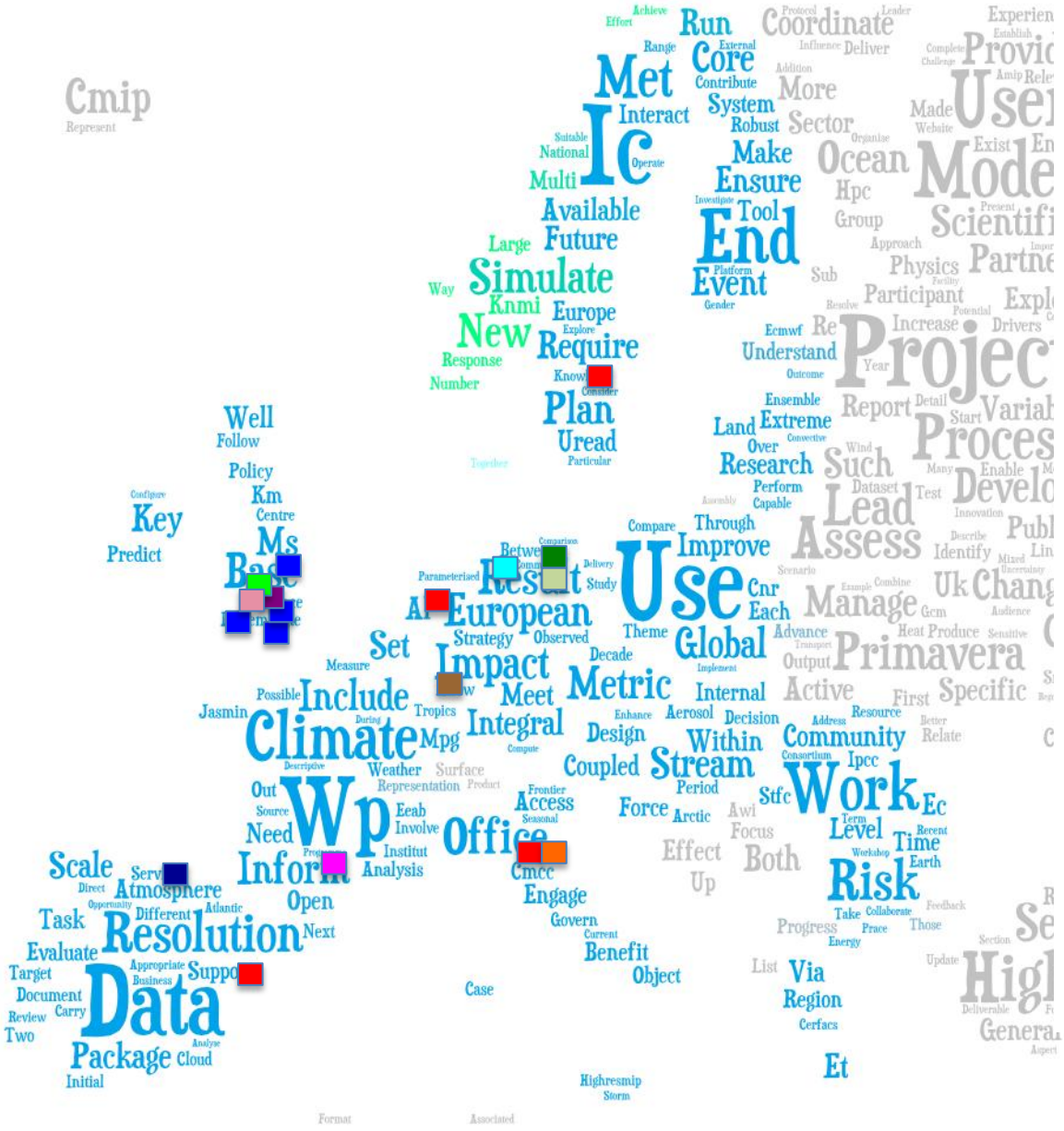
Project manager: Paul van der Linden, Met Office
Coordinator: Malcolm Roberts, Met Office
Scientific coordinator: Pier Luigi Vidale, NCAS-Climate, Univ. of Reading

Project starts:1st Nov 2015, for 4 years
Funded under Horizon2020 Grant Agreement 641727

Co-funded by
the European Union

PRIMAVERA

19 partners from around Europe



Models (and related groups):

HadGEM3-GC3 (MOHC, UREAD, NCAS, NOC, ULEEDS)
EC-Earth (KNMI, SMHI, BSC, CNR)
MPI (MPG)
CMCC-CM (CMCC)
CNRM (CERFACS)
AWI (AWI)
IFS (ECMWF)

Sea-ice: UCL
Stochastic: UOXFORD

Technology:
STFC
DKRZ
■

End users:
PREDICTIA

PRIMAVERA

PRIMAVERA goals and objectives

Goal:

- to deliver novel, advanced and well-evaluated high-resolution global climate models (GCMs), capable of simulating and projecting regional climate with unprecedented fidelity, out to 2050.

To deliver:

- innovative climate science and a new generation of European advanced GCMs.
  - Including delivery to CMIP6 HighResMIP international comparison via ESGF
  - Coordination of HighResMIP analysis, particularly as relates to Europe
- improve understanding of the drivers of variability and change in European climate, including extremes, which continue to be characterised by high uncertainty
- new climate information that is tailored, actionable and strengthens societal risk management decisions with sector-specific end-users
- new insights into climate processes using eddy-resolving ocean and explicit convection atmosphere models
- Engagement and communication with key communities (e.g. WGCM, GEWEX) and policy makers

Co-funded by
the European Union

PRIMAVERA

European HighResMIP model resolutions (as part of PRIMAVERA)

Institution	MO NCAS	KNMI IC3 SMHI CNR	CERFACS	MPI	AWI	CMCC	ECMWF
Model names	MetUM NEMO	ECEarth NEMO	Arpege NEMO	ECHAM MPIOM	ECHAM FESOM	CCESM NEMO	IFS NEMO
Atmosph. Res., core	60-25km	T255-799	T127-359	T63-255	T63-255	100-25km	T319-799
Oceanic Res., core	¼°	¼°	¼	0.4-¼°	1-¼ spatially variable	¼	¼
Oceanic Res., Frontiers	1/12˚	1/12˚		1/10˚	1/10˚ Spatially variable		

- Concentrate on horizontal resolution – keep vertical resolution the same
- Global atmosphere resolutions: range from 150km to 6km
- Global ocean resolutions: from 1˚ to 1/12˚

Co-funded by the European Union

PRIMAVERA themes and work packages

Table 1.3.1: Correspondence between Themes and work packages

	Corresponding work packages in the work plan
Theme 1 Innovations in modelling and exploring the frontiers of climate modelling	WP1 - Development and application of metrics for process-based evaluation and projections WP3 - The role of model physics WP4 - Frontiers of Climate Modelling WP6 - Flagship simulations
Theme 2 Process-based assessment of high-resolution global climate models	WP1, 3, 4 WP2 – The added value of high-resolution in components of the physical climate system WP5 - Drivers of variability and change in European climate
Theme 3 The drivers of European climate variability and change	WP2, 3, 5
Theme 4 Flagship simulations for CMIP6 and IPCC AR6	WP4, 6
Theme 5 Climate risk assessment and user engagement	WP8 – Scientific coordination WP10 - Climate Risk Assessment WP11 – End-user Engagement and Dissemination

Co-funded by
the European Union

PRIMAVERA