

# CMIP6: Feedback from CNRM-CERFACS

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## Introduction: CNRM-CM5 (CMIP5)

- **CNRM-CM5** : ARPEGE-Climat v5 (diag. physics) TL127L31 + NEMO3.2 ORCA1L42 + SURFEX + TRIP1° (Voltaire et al., Clim. Dyn, 2013)
- Meteo-France's **operational seasonal prediction** based on CNRM-CM5
- **Contribution to CMIP5** : ~9000 years for CMIP5 (centennial, CNRM), 4000 years (decadal, CERFACS)
- Participated to CFMIP, PMIP, D&A large ensemble (30 historical expts)
- **Derived versions** :
  - **CNRM-ESM1** : CNRM-CM5 + carbon cycle
  - **CNRM-CCM** : CNRM-CM5 including stratospheric + tropospheric chemistry (60 vertical levels in the atmosphere)
  - **CNRM-CM** with interactive Greenland ice-sheet

## Plans for CNRM-CM6

- **CNRM-CM6 AOGCM:**

- low resolution (LR) : for D&A, ScenarioMIP... ARPEGE-Climat v6 (prognostic physics) TL127L91 + NEMO3.6 ORCA1L42|75 + SURFEX + TRIP0.5°
- high resolution (HR): for HighResMIP... Atm: TL359L91 / Oce: ORCA025L75

- **2015:**

- CNRM-CM6.1 LR available by Jan. 2015
- Jan.-Mar. 2015: « DECK » #0 with CNRM-CM6.1
- CNRM-CM6.2 + CNRM-ESM2 LR available by late 2015
- CNRM-CM6.2 HR available by late 2015 (for seasonal forecasting).

- **2016:**

- DECK + NUCLEUS 6 (CNRM-CM6.2 LR + ESM):
- DECK (CNRM-CM6.2 HR)
- CNRM-ESM2 HR available

- **2017:**

- MIPs (CNRM-CM6.2 LR)
- DECK + C4MIP + ... (CNRM-ESM2 HR)

## Plans for CNRM-CM6 : participation to MIPs

	Short name of MIP	Long name of MIP	Yes	Possibly	No
1	<b>AerChemMIP</b>	Aerosols and Chemistry Model Intercomparison Project	X		
2	<b>C4MIP</b>	Coupled Climate Carbon Cycle Model Intercomparison Project	X		
3	<b>CFMIP</b>	Cloud Feedback Model Intercomparison Project	X		
4	<b>DAMIP</b>	Detection and Attribution Model Intercomparison Project	X		
5	<b>DCPP</b>	Decadal Climate Prediction Project	X		
6	<b>FAFMIP</b>	Flux-Anomaly-Forced Model Intercomparison Project			X
7	<b>GDDEX</b>	Global Dynamical Downscaling Experiment			X
8	<b>GeoMIP</b>	Geoengineering Model Intercomparison Project		X	
9	<b>GMMIP</b>	Global Monsoons Model Intercomparison Project		X	
10	<b>HighResMIP</b>	High Resolution Model Intercomparison Project	X		
11	<b>ISMIP6</b>	Ice Sheet Model Intercomparison Project for CMIP6		X	
12	JCOMM*	Coordinated Ocean Wave Climate Project		X	
13	<b>LS3MIP</b>	Land Surface, Snow and Soil Moisture	X		
14	<b>LUMIP</b>	Land-Use Model Intercomparison Project	X		
15	<b>nonlinMIP</b>	Non-linear Model Intercomparison Project		X	
16	<b>OCMIP6</b>	Ocean Carbon Cycle Model Intercomparison Project, Phase 6	X		
17	<b>PDRIP</b>	Precipitation Driver and Response Model Intercomparison Project			X
18	<b>PMIP</b>	Palaeoclimate Modelling Intercomparison Project		X	
19	<b>RFMIP</b>	Radiative Forcing Model Intercomparison Project	X		
20	ScenarioMIP**	Scenario Model Intercomparison Project	X		
21	<b>SensMIP</b>	Sensitivity Model Intercomparison Project			X
22	<b>VolMIP</b>	Volcanic Forcings Model Intercomparison Project		X	

## A few ideas...

- D&A mostly interesting from 1950 – **reduce DAMIP ensemble members to a minimum** (1900-present ? 1950-present ?)
- NUCLEUS 6: For groups not participating to DAMIP, **1 single 1850-present may be a problem:**
  - lack of characterization of present day variability
  - difficult to assess some modeled recent trends (e.g. sea ice extent)
  - would advocate for 3x1900-present (for the price of 2 1850-present !)
  - more than 3 would discourage many analysts...



**Thank you !**