

## IPSLCM6\_LR - (IPSLCM6\_rc1) configuration

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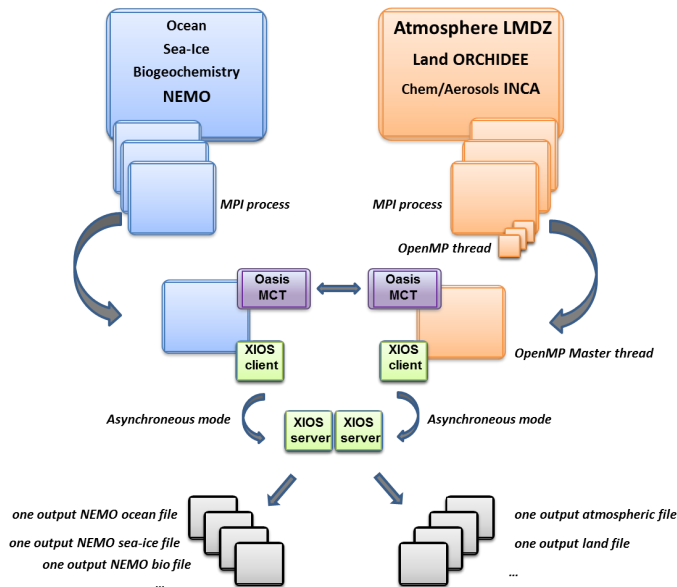
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## 1. IPSLCM6 model

You can find [here](#) a description for IPSLCM6 model

The version rc1 (IPSLCM6\_rc1) runs on **Curie-TGCC thin nodes**.



## 2. Resolutions and configurations

IPSLCM6 model will be available at different resolutions/configurations :

- **IPSLCM6A-VLR\_rc0** : LMDZ(Old Physics) 96x95x39-ORCHIDEE (Choisnel) - NEMO-LIM2-PISCES ORCA2. You can find [here](#) informations for the VLR (IPSLCM6\_rc0) configuration.
- **IPSLCM6-LR** (under development, **not available**) : LMDZ 144x144x79-ORCHIDEE (CWRR) - NEMO-LIM3-PISCES eORCA1xL75

### 2.1. IPSLCM6-LR\_rc1

The resolution of LMDZ is 144x142 (2.5° in longitude and 1.5° in latitude) with 79 vertical levels. The ocean configuration is eORCA1L75 : global ocean with a tripolar grid with one South pole, one North pole above Siberia and one North pole above northern America. The resolution is 1°. In the tropical region, the latitudinal resolution decreases to 1/2°. There are 76 vertical levels, with 1m resolution near the surface, and 200m in the abyss.

For LMDZ, the new physics is used. Current test (Sept. 2015) is NP 5.17h.

**IPSLCM6-LR\_rc1** is composed of following components and tools (Sept. 2015) :

```
#-H- IPSLCM6_rc1 IPSLCM6_rc1 coupled configuration
#-H- IPSLCM6_rc1 Working configuration started 27/03/2015
#-H- IPSLCM6_rc1 NEMOGCM branches/v3_6_STABLE/NEMOGCM revision 5618
#-H- IPSLCM6_rc1 XIOS branch xios-1.0 revision 592
#-H- IPSLCM6_rc1 IOIPSL/src svn tags/v2_2_2
#-H- IPSLCM6_rc1 LMDZ5 trunk revision 2327
#-H- IPSLCM6_rc1 ORCHIDEE version trunk rev 2724
#-H- IPSLCM6_rc1 OASIS3-MCT 2.0_branch rev 1129
#-H- IPSLCM6_rc1 IPSLCM6 svn
#-H- IPSLCM6_rc1 libIGCM trunk 1174
#-M- IPSLCM6_rc1 arnaud.caubel@lsce.ipsl.fr
#-C- IPSLCM6_rc1 IOIPSL/tags/v2_2_2/src HEAD 8 IOIPSL/src modeles
#-C- IPSLCM6_rc1 trunk/ORCHIDEE 2848 14 ORCHIDEE modeles
```

#-C- IPSLCM6_rc1	branches/OASIS3-MCT_2.0_branch/oasis3-mct	1129	15	oasis3-mct	.
#-C- IPSLCM6_rc1	LMDZ5/trunk	2327	11	LMDZ	modeles
#-C- IPSLCM6_rc1	CONFIG/UNIFORM/v6/IPSLCM6	HEAD	8	IPSLCM6	config
#-C- IPSLCM6_rc1	trunk/libIGCM	1174	10	libIGCM	.
#-C- IPSLCM6_rc1	branches/2015/nemo_v3_6_STABLE/NEMOGCM		5618	7	modeles
#-C- IPSLCM6_rc1	trunk/ORCA1_LIM3_PISCES	HEAD	17	.	modeles/NEMOGCM/CONFIG
#-C- IPSLCM6_rc1	XIOS/branchs/xios-1.0	604	12	XIOS	modeles

**Caution** : this is subject to quick changes !

### 2.1.1. How to use it

Here are the commands you need to know if you want to retrieve and compile the IPSLCM6 model and if you want to setup and run a piControl experiment (only piControl experiment is available):

```
mkdir YOUR_DIRECTORY ; cd YOUR_DIRECTORY
svn_ano # svn co http://forge.ipsl.jussieu.fr/igcmg/svn/modipsl/trunk modipsl
cd modipsl/util
./model IPSLCM6_rc1
cd ../config/IPSLCM6
gmake IPSLCM6-LR
cp EXPERIMENTS/IPSLCM6/EXP00/config.card .
vi config.card # modify JobName (at least) : MYJOBNAME, restarts
../util/ins_job # Check and complete job's header
cd MYJOBNAME
vi Job_MYJOBNAME # modify PeriodNb, adjust the time, headers ...
llsubmit Job_MYJOBNAME # IDRIS
ccc_msub Job_MYJOBNAME # TGCC
```

#### 2.1.1.1. Specific command on TGCC Bull Curie thin nodes

The basic configuration (default configuration) uses **598 computing cores** or 38 nodes: 1 process for XIOS, 221 processes for NEMO, and 47 MPI processes and 8 OpenMP thread for LMDZ. You have to modify header of the Job script as follow :

```
#MSUB -n 598 # number of cores used by the Job (equal to the total number of process/threads : for example 47X8 + 221 + 1)
#MSUB -x # Specify the node is not shared
#MSUB -E '--cpu_bind=none'
```

and config.card as follows :

```
#####
#D-- Executable -
[Executable]
#D- For each component, Real name of executable, Name of executable for oasis
ATM= (gcm.e, lmdz.x, 47MPI, 8OMP)
SRF= ("", "" )
SBG= ("", "" )
OCE= (opa, opa.xx , 221MPI)
ICE= ("", "" )
MBG= ("", "" )
CPL= ("", "" )
IOS= (xios_server.exe, xios.x, 1MPI)
```

### 2.1.2. Restart files

Not available yet. Waiting for reference simulations.

### 2.1.3. Output level

By default, only **monthly outputs** and **low output levels** are activated.

## 2.1.4. Lengths, frequencies

### 2.1.4.1. Period length

Default period length is 1Y, i.e in config.card :

```
PeriodLength=1Y
```

Note that clean\_PeriodLenght.job will remove last period files, i.e last simulated year files.

### 2.1.4.2. Pack Frequency

Default pack frequency is 1Y, i.e in config.card :

```
PackFrequency=1Y
```

### 2.1.4.3. Rebuild frequency

Since we run with XIOS (server mode) as output library, **the rebuild step is not needed anymore.**

## 2.1.5. Computing centres

### 2.1.5.1. TGCC Bull Curie thin nodes

Default configuration on **598 cores** allows you to run **3 simulated years per day**. Because of load-balancing (difference between ocean computing time and atmosphere computing time), not all configurations (in terms of number of process/threads) are efficient. If you want to run a configuration with less cores, ask Arnaud Caubel what would be the optimum configuration.