Wikiprint Book

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Subject: lgcmg_doc - Doc/Config/IPSLCM6

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IPSLCM6 configuration

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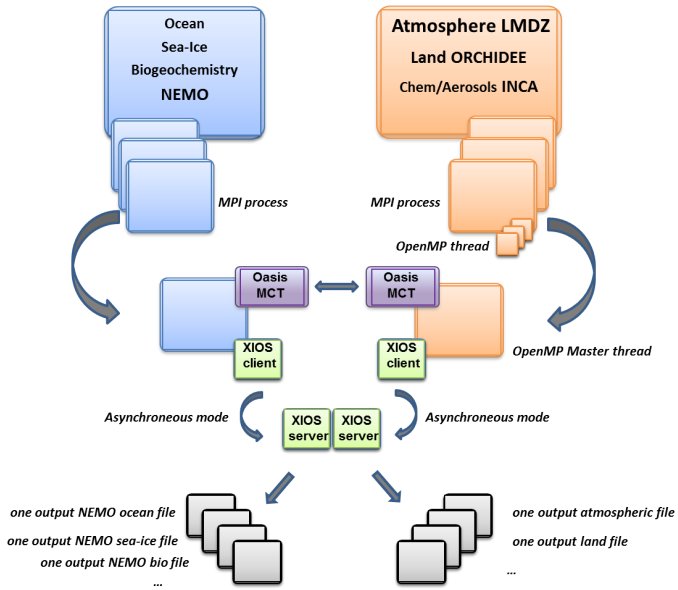
1. Description of the configuration



IPSLCM6 model is available at different resolutions/configurations :

- IPSLCM6-LR : LMDZ 144x144x79-ORCHIDEE (CWRR) - NEMO-LIM3-PISCES eORCA1xL75.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.
- IPSLCM6-MR : LMDZ 256x256x79-ORCHIDEE (CWRR) - NEMO-LIM3-PISCES eORCA1xL75

IPSLCM6-LR is composed of following components and tools (Oct. 2019) :

```
#-H- IPSLCM6.1.10-LR IPSLCM6.1.10-LR coupled configuration
#-H- IPSLCM6.1.10-LR 11th IPSLCM6.1-LR version
#-H- IPSLCM6.1.10-LR https://forge.ipsl.jussieu.fr/igcmg/ticket/120
#-H- IPSLCM6.1.10-LR NEMOGCM branch nemo_v3_6_STABLE revision 9455
#-H- IPSLCM6.1.10-LR SHACONEMO revision 278
#-H- IPSLCM6.1.10-LR XIOS2 trunk revision 1550 branch xios-2.5
#-H- IPSLCM6.1.10-LR IOIPSL src tags 2_2_4
#-H- IPSLCM6.1.10-LR LMDZ6 LMDZ6/branches/IPSLCM6.0.15 rev 3554
#-H- IPSLCM6.1.10-LR ORCHIDEE version tags/ORCHIDEE_2_0/ORCHIDEE revision 5661
#-H- IPSLCM6.1.10-LR OASIS3-MCT 2.0_branch rev 1818
#-H- IPSLCM6.1.10-LR IPSLCM6 svn 4673
#-H- IPSLCM6.1.10-LR libIGCM trunk rev 1478
#-M- IPSLCM6.1.10-LR arnaud.caubel@lsce.ipsl.fr
#-C- IPSLCM6.1.10-LR IOIPSL/tags/v2_2_4/src                          HEAD        8 IOIPSL/src     modeles
#-C- IPSLCM6.1.10-LR tags/ORCHIDEE_2_0/ORCHIDEE                     5661       14 ORCHIDEE       modeles
#-C- IPSLCM6.1.10-LR branches/OASIS3-MCT_2.0_branch/oasis3-mct      1818       15 oasis3-mct     .
#-C- IPSLCM6.1.10-LR LMDZ6/branches/IPSLCM6.0.15                    3554       11 LMDZ           modeles
#-C- IPSLCM6.1.10-LR trunk/INCA6                                    825         9 INCA           modeles
#-C- IPSLCM6.1.10-LR CONFIG/UNIFORM/v6/IPSLCM6                      4673        8 IPSLCM6        config
#-C- IPSLCM6.1.10-LR trunk/libIGCM                                  1478       10 libIGCM        .
#-C- IPSLCM6.1.10-LR branches/2015/nemo_v3_6_STABLE/NEMOGCM         9455        7 .              modeles
#-C- IPSLCM6.1.10-LR trunk/ORCA1_LIM3_PISCES                         278       17 .              modeles/NEMOGCM/CONFIG
```

```
#-C- IPSLCM6.1.10-LR XIOS/branchs/xios-2.5                              1550        12 XIOS          modeles
```

2. Technical details

2.1. 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 IPSLCM6.1.10-LR
cd ../config/IPSLCM6
gmake IPSLCM6-LR
cp EXPERIMENTS/IPSLCM/piControl_TEST/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 ...
sbatch Job_MYJOBNAME # IDRIS
ccc_msub  Job_MYJOBNAME # TGCC
```

2.1.1. Restart files

Not available yet. Waiting for reference simulations.

2.1.2. Output level

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

2.1.3. Lengths, frequencies

2.1.3.1. Period length

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

```
PeriodLength=1Y
```

Note that clean_PeriodLength.job will remove last period files, i.e last simulated year files.

2.1.3.2. Pack Frequency

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

```
PackFrequency=1Y
```

2.1.3.3. Rebuild frequency

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

2.1.3.4. How to add a parameter in NEMO's namelist?

- let find the parameter in namelist_ref. For example in modeles/NEMOGCM/CONFIG/SHARED/namelist_ice_lim3_ref
- let find the namelist's name : for example &namicedyn
- let add a line with the new of the parameter in the file PARAM/namelist_lim3_ORCA1_cfg in the &namicedyn section

2.1.3.5. What is the maximum length for a simulation name?

Due to limitation in NEMO, a simulation should have **less than 39 characters**.

2.1.4. Computing centres

2.1.4.1. 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.