The IPSLCM6.2 configuration is a part of the IPSLCM6 family model describes here
■https://forge.ipsl.jussieu.fr/igcmg_doc/wiki/Doc/Config/IPSLCM6#IPSLCM6model

1. Resolutions and configurations

IPSLCM6.2 model will be available at different resolutions/configurations :

- **VLR** : LMDZ 96x95x39-ORCHIDEE - NEMO-LIM2-PISCES ORCA2xL31. **under development**
- **LR** : LMDZ 144x144x79-ORCHIDEE - NEMO-LIM3-PISCES eORCA1xL75
- **MR1** : LMDZ 256x256x79-ORCHIDEE - NEMO-LIM3-PISCES eORCA1xL75 **under development**
- **MR025** : LMDZ 256x256x79-ORCHIDEE - NEMO-LIM3 eORCA025xL75
- **ESMCO2** : LMDZ 144x144x79-ORCHIDEE - NEMO-LIM3-PISCES eORCA1xL75 with interactive carbon cycle ocean/atmosphere.
- **ESMAER** : LMDZ 144x144x79-ORCHIDEE-INCA - NEMO-LIM3-PISCES eORCA1xL75 with interactive aerosols on atmosphere.

The default configuration LR is exactly the same describes here

1.1. 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.

IPSLCM6.2 is composed of following components and tools (Oct. 2019) :

```
#-H- IPSLCM6.2_work  IPSLCM6.2_work coupled configuration
#-H- IPSLCM6.2_work  This configuration is under construction
#-H- IPSLCM6.2_work  NEMOGCM branch nemo_v3_6_STABLE revision 9455
#-H- IPSLCM6.2_work  SHACONEMO revision 279
#-H- IPSLCM6.2_work  XIOS trunk revision 1659
#-H- IPSLCM6.2_work  IOIPSL src trunk 4432
#-H- IPSLCM6.2_work  LMDZ6 trunk rev 3489
#-H- IPSLCM6.2_work  ORCHIDEE version branches/ORCHIDEE_2_2/ORCHIDEE revision 6189
#-H- IPSLCM6.2_work  OASIS3-MCT 2.0_branch rev 1818
#-H- IPSLCM6.2_work  IPSLCM6.2 latest revision
#-H- IPSLCM6.2_work  libIGCM trunk rev 1482
#-M- IPSLCM6.2_work  arnaud.caubel@lsce.ipsl.fr
#-C- IPSLCM6.2_work  IOIPSL/trunk                                  4432      8   IOIPSL      modeles
#-C- IPSLCM6.2_work  branches/ORCHIDEE_2_2/ORCHIDEE                6189     14   ORCHIDEE    modeles
#-C- IPSLCM6.2_work  branches/OASIS3-MCT_2.0_branch/oasis3-mct     1818     15   oasis3-mct  .
#-C- IPSLCM6.2_work  LMDZ6/trunk                                   3559     11   LMDZ        modeles
#-C- IPSLCM6.2_work  CONFIG/UNIFORM/v6/IPSLCM6.2                   HEAD      8   IPSLCM6     config
#-C- IPSLCM6.2_work  trunk/libIGCM                                1488     10   libIGCM     .
#-C- IPSLCM6.2_work  branches/2015/nemo_v3_6_STABLE/NEMOGCM        9455      7   .           modeles
#-C- IPSLCM6.2_work  trunk/ORCA1_LIM3_PISCES                       287     17   .           modeles/NEMOGCM/CONF
#-C- IPSLCM6.2_work  trunk/ORCA025_LIM3_PISCES                     287     17   .           modeles/NEMOGCM/CONF
#-C- IPSLCM6.2_work  trunk/INCA6                                       873           9   INCA        mode
#-C- IPSLCM6.2_work  XIOS/trunk                                   1659     12   XIOS        modeles
```

Caution : this is subject to quick changes !

1.1.1. How to use it

To retrieve the configuration :

```
mkdir YOUR_DIRECTORY ; cd YOUR_DIRECTORY
svn_ano    # svn co http://forge.ipsl.jussieu.fr/igcmg/svn/modipsl/trunk modipsl
cd modipsl/util
```

```
./model  IPSLCM6.2_work
cd ../config/IPSLCM6
```

The compilation slightly differs from what has been done so far. Now we used a script named **compile_ipslcm6.sh** with several option (resolution, level of optimisation, full or partial recompilation) to compile the model

```
#######################################################################
# Usage of the script compile_ipslcm6.sh
#
#######################################################################

./compile_ipslcm6.sh [Options]


Options: [LR / VLR / MR1 / MR025] Model resolution, choose only one. Default: LR.
        [ESMCO2] Compile IPSLCM6 for CO2 interactif ocean/atmosphere.
        [ESMAER] Compile IPSLCM6 for AER interactif on atmosphere
        [-full] Full recompilation of all components. This option can be added to all other options.
        [-cleannemo] Full recompilation of NEMO component  only.
        [-debug / -dev / -prod] Level of optimization. One of these can be added to all other compile options. Default: -p


Example 1: Default compilation of IPSLCM6 for resoltion LR
         (Resolution atmos: 144x142x79, ocean: ORCA1)
./compile_ipslcm6.sh

Example 2: Compilation of IPSLCM6 for resolution MR025
          (atmos: 256x256x79, ocean: ORCA025, NOPISCES)
./compile_ipslcm6.sh MR025

Example 3: Compilation of IPSLCM6 for ESM CO2
./compile_ipslcm6.sh ESMCO2 -cleannemo

Example 4: Default resoltuion (LR) compiled in debug mode
./compile_ipslcm6.sh -debug

Example 5: Default compilation with full recompilation of all components. No clean is needed.
./compile_ipslcm6.sh -full

Example 6: Full recompilation of resolution MR05 in debug mode
./compile_ipslcm6.sh MR025 -debug -full
```

cp EXPERIMENTS/IPSLCM6/EXP00/config.card . vi config.card # modify [JobName?](at least) : MYJOBNAME, restarts ../../util/ins_job # Check and complete job's header

2. ../../util/ins_job -m Intel

on ada after a compilation with Intel 2016.2 cd MYJOBNAME vi Job_MYJOBNAME # modify [PeriodNb?](,)adjust the time, headers ... llsubmit Job_MYJOBNAME # IDRIS ccc_msub Job_MYJOBNAME # TGCC }}}

2.0.1. Restart files

Not available yet. Waiting for reference simulations.

2.0.2. Output level

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

2.0.3. Lengths, frequencies

2.0.3.1. 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.

2.0.3.2. Pack Frequency

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

```
PackFrequency=1Y
```

2.0.3.3. Rebuild frequency

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

2.0.3.4. 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

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

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

2.0.4. Computing centres

2.0.4.1. 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.