

IPSLCM7 configuration - the ESM configuration

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IPSLCM7_work is a configuration under construction. Contact one of the persons in charge before first use.

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1. Philosophy of v7

v7 configuration lets you choose between a simulation using an icosahedral grid or a simulation using a regular grid. By default the compilation will compile for both grids and the user can switch between all experiments.

An other new feature is that now all sub-configuration will be available in the coupled model one, and will not exist anymore in the mod.def selection. The user can choose to extract all models, create executables for all sub-configuration, or extract only a specific subconfiguration. To do this you need to add the subconfiguration chosen after the name of the configuration when you are using the model script in modipsl/util directory

```
cd modipsl/util
./model IPSLCM7_work

or for example

cd modipsl/util
./model IPSLCM7_work ICOLMDZOR
```

For configurations using ORCHIDEE model, (LMDZOR, IPSLCM, or ORCHIDEE_offline - but not for LMDZORINCA) the user will have the choice to compile and run with ORCHIDEE_2_2 or ORCHIDEE_4.

2. Resolutions and configurations

IPSLCM7 model is available for different resolutions and sub-configurations :

- LR** : LMDZ 144x144x79-ORCHIDEE - NEMO4 eORCA1xL75
- IPSLCM-reg (for the moment without CO2 or biogenic cycles)
 - LMDZ
 - LMDZOR
 - LMDZORINCA (chemistries AER, GES, NMHC_AER_S)
- nbp40** : DYNAMICO LMDZ - ORCHIDEE - NEMO4 eORCA1xL75
- IPSLCM-ico (for the moment without CO2 or biogenic cycles)
 - ICOLMDZ
 - ICOLMDZOR
 - ICOLMDZORINCA (chemistries AER, GES)

3. Models Revision

IPSLCM7 is composed of following components and tools (reference version used for training courses in Jan. 2024) :

| | | | | | | |
|---------------------|---|----------|----|-----------------|---------|----------|
| #-C- IPSLCM7_TP2024 | master | 3558d704 | 21 | DYNAMICO | modeles | DYNAMICO |
| #-C- IPSLCM7_TP2024 | ICOSA_LMDZ | 4616 | 20 | ICOSA_LMDZ | modeles | DYNAMICO |
| #-C- IPSLCM7_TP2024 | IOIPSL/tags/v2_2_5 | 6644 | 8 | IOIPSL | modeles | IOIPSL |
| #-C- IPSLCM7_TP2024 | branches/ORCHIDEE_2_2/ORCHIDEE | 8388 | 14 | ORCHIDEE_2_2 | modeles | ORCHIDEE |
| #-C- IPSLCM7_TP2024 | trunk/ORCHIDEE | 8388 | 14 | ORCHIDEE_4 | modeles | ORCHIDEE |
| #-C- IPSLCM7_TP2024 | CPL/oasis3-mct/branches/OASIS3-MCT_5.0_branch | 6331 | 8 | oasis3-mct | . | OASIS |
| #-C- IPSLCM7_TP2024 | LMDZ6/trunk | 4515 | 20 | LMDZ | modeles | LMDZ |
| #-C- IPSLCM7_TP2024 | LMDZ6/trunk/arch | 4726 | 20 | LMDZ/arch | modeles | LMDZ |
| #-C- IPSLCM7_TP2024 | CONFIG/UNIFORM/v7/IPSLCM7 | 6733 | 8 | IPSLCM7 | config | CONFIG |
| #-C- IPSLCM7_TP2024 | branches/ORCHIDEE_2_2/ORCHIDEE_OL | 8391 | 14 | ORCHIDEE_OL_2_2 | config | ORCHIDEE |
| #-C- IPSLCM7_TP2024 | trunk/ORCHIDEE_OL | 8378 | 14 | ORCHIDEE_OL_4 | config | ORCHIDEE |
| #-C- IPSLCM7_TP2024 | trunk/libIGCM | 1621 | 10 | libIGCM | . | libIGCM |
| #-C- IPSLCM7_TP2024 | 4.2.0 | HEAD | 22 | NEMO | modeles | NEMO |

| | | | | | | | |
|------|----------------|-------------|------|----|------|---------|------|
| #-C- | IPSLCM7_TP2024 | trunk/INCA6 | 1106 | 9 | INCA | modeles | INCA |
| #-C- | IPSLCM7_TP2024 | XIOS2/trunk | 2590 | 12 | XIOS | modeles | XIOS |

4. Experiments

For the forced models on the regular grid (LMDZ, LMDZOR, LMDZORINCA) the configuration is close to [IPSLCM6.2](#) configuration. For the coupled model on the regular grid, the main difference from IPSLCM6.2 is the use of NEMO4 instead of NEMO3.

When you download IPSLCM7 in full version, or only for a sub-configuration, you will also download config directories to run ORCHIDEE model in offline mode.

- To compile you will use the target the command `./compile_ipslcm7.sh` (see [here](#) for more details on compilation)
- For the experiments, you can choose between `EXPERIMENTS/`:
 - ICOLMDZ/aquaplanet
 - ICOLMDZ/clim_noleap
 - ICOLMDZ/CREATE_amip
 - ICOLMDZ/CREATE_hadisst
 - ICOLMDZOR/clim_pdControl
 - ICOLMDZOR/clim_pdControl.orch4
 - ICOLMDZOR/highresmip
 - ICOLMDZOR/highresmip_CMIP6
 - ICOLMDZORINCA/AER
 - ICOLMDZORINCA/GES
 - ICOLMDZORINCA/NMHC_AER_S
 - ICOLMDZORINCA/CREATE_etat0
 - IPSLCM7-ico/piControl_TEST
 - IPSLCM7-ico/piControl_TEST.orch4
 - IPSLCM7-reg/pdControl_TEST
 - IPSLCM7-reg/pdControl_TUNING
 - IPSLCM7-reg/piControl_TEST
 - LMDZ/clim_360d
 - LMDZ/CREATE_amip
 - LMDZ/CREATE_clim
 - LMDZ/CREATE_clim_360d
 - LMDZOR/amip
 - LMDZOR/clim_pdControl
 - LMDZORINCA/AER
 - LMDZORINCA/GES
 - LMDZORINCA/NMHC_AER_S

+ ORCHIDEE_offline configuration