OA COUPLING TUTORIAL 0:
CREATE THE WORKING ENVIRONEMENT for OA COUPLING

In this tutorial, we will **prepare the working environment for the CROCO OA-Coupling** advanced week. We will connect to the LENGAU **CHPC cluster**, copy the source codes to run stand-alone and coupled CROCO and WRF simulations.

STEP 1: Logging onto the Lengau HPC cluster

→ From a terminal/konsole, execute the following instruction:

```
ssh -X login@lengau.chpc.ac.za
```

Replace **login** with your corresponding account number.

→ Reserve one interactive processor (see Step 4 from **#TUTORIAL01 BASIC WEEK**):

```
[login@login2 ~]$ qsubi1
[login@cnode0220 ~]$
```

→ Go directly into your **lustre** directory:

```
[login@cnode0220 ~]$ cd lustre
[login@cnode0220 lustre]$ ls
CROCO
[login@cnode0220 lustre]$
```

NODES

If you missed CROCO Basic training, copy my **.bashrc** file, create a symbolic link to access your **lustre** directory and then a **lustre/CROCO** directory in which you copy **croco-v2.0.1** and **croco_tools-v2.0.0** source codes (see **#TUT01 BASIC WEEK**).

Call a lecturer to help you!

STEP 2: Copy the coupling environment (CPL) with model files

→ **Copy the prepared environment into your lustre directory** execute the following command:

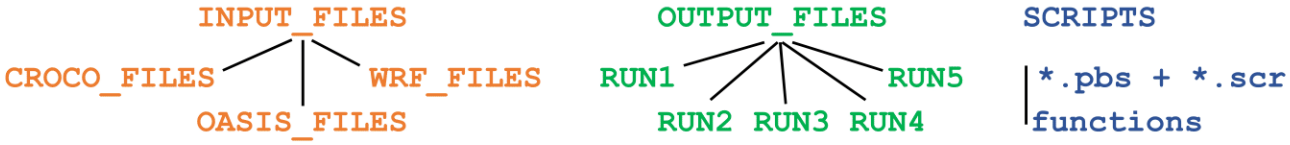
```
cp -r /home/apps/chpc/earth/CROCCO_Workshop/CROCO_TRAINING_OA/1_Coupling_ENV/* .
```

Do not hesitate to use **tab autocomplete**: Start typing the file/command name in the terminal and then press the "Tab" key. If there is only one file/command that matches the typed characters, the system will automatically complete the name.

→ You can now see that your **lustre** directory has been completed with 4 additional directories:

```
[login@cnode0220 lustre]$ ls
CROCO OASIS TOY_MODELS WORK_MCC WRF
[login@cnode0220 CROCO]$
```

- The **CROCO** directory contains **croco-v2.0.1** and **croco_tools-v2.0.0** source codes.
- The **OASIS** directory contains the **OASIS3-MCT** coupler source code (see **#CPL_TUT02**).
- The **TOY_MODELS** directory contains the source code of an atmosphere TOY model component (**atoy2d**) and an ocean TOY model component (**otoy2d**) whose role is reduced to get exchanged fields from CROCO (used in **#CPL_TUT02**) and WRF (used in **#CPL_TUT04**), respectively.
- **WRF** directory contains the compiled WPS and WRF model (used in **#CPL_TUT03**).
- **WORK_MCC** directory is the working directory, with prepared sub-directories:



STEP 3: Creating CROCO Run directory in WORK_MCC directory

To prepare all our CROCO simulations (forced and coupled), we will use **croco** and **croco_tools** scripts. Therefore, we need to create a **Run** directory that will be the central place for running **MATLAB** and compiling **CROCO**. This directory will be placed in **WORK_MCC**:

→ Go into the **croco-v2.0.1** directory (**lustre/CROCO/croco-v2.0.1**):

```
[login@cnode0220 ~]$ cd CROCO/croco-v2.0.1
[login@cnode0220 croco-v2.0.1]$
```

→ Create a new CROCO configuration called **Run** that will be placed into the **WORK_MCC** directory. For this, you have to repeat **STEP 2** from **#TUT02 BASIC WEEK**, i.e.:

❶ Edit **create_config.bash** with **MY_CONFIG_NAME=../../WORK_MCC/Run**; (line 68)

❷ Execute **create_config.bash** in the terminal:

```
[login@cnode0220 croco-v2.0.1]$ nedit create_config.bash &
[login@cnode0220 croco-v2.0.1]$ ./create_config.bash
[login@cnode0220 croco-v2.0.1]$ cd ../../WORK_MCC
```

→ You can now see that your **WORK_MCC** directory has been completed with the additional **Run** directory:

```
[login@cnode0220 WORK_MCC]$ ls
CROCO_FILES OASIS_FILES Run WRF_FILES
[login@cnode0220 WORK_MCC]$ cd Run
```

→ To compile CROCO (forced or coupled) on Lengau, you will need my **jobcomp_lengau**. Copy the file into your **Run** directory:

```
cp /home/apps/chpc/earth/CROCCO_Workshop/CROCO_TRAINING_OA/2_Some_files/job* .
```

STEP 4: Exiting

→ Give back the interactive node and logout from Lengau:

```
[login@cnode0220 CROCO]$ exit
logout
qsub: job 4416950.sched01 completed
[login@login2 ~]$ exit
```

The finalized WORK_MCC Directory