# *Status of C2I at COMET*

GOAL: to start some icon-test (same domain of COSMO-ME) with IFS boundary (rotated lat/lon) and interpolated COSMO-ME analysis.

*Encountered problems with rotated IFS data  as LBC:*

- ❑ These data have actually only one horizontal grid and a metadata called uvrelativetogrid for u,v. This metadata made cdo and cdi think that u and v are on a different horizontal grid, leading to an error. This should be fixed in the new cdo/cdi version;

- ❑ uv field in "masspoint" grid are needed;

- ❑ The vertical coordinate information needed by ICON was missing. ICON needs two fields in case of IFS data:
    1. PS or LNPS: Surface pressure or the logarithm of the surface pressure (at moment our data contains pressure deviation instead)
    2. GEOSP or GEOP_ML: surface geopotential or geopotential at model levels

**STATUS:** *Daniel is still investigating our LBC fields*

❑ Due to the staggering, there are actually different grids for U and V stored in the file. The icontools cannot handle this

**switch on luvmasspoint in your COSMO output namelist**

❑ Problem with the vertical coordinate in the file which is unsupported by ICON

_(vertical axis in our file were hybrid, ICON requires generalVertical)_

**fixed by grib set commands**, e.g.:  «_grib_set -s typeOfLevel=generalVertical -w typeOfLevel=hybrid ...»_

❑ three options for input data: init_mode=4 (COSMO), init_mode=5 (IAU) or init_mode=7 (VREMAP)
**SUGGESTED to use init_mode 7**. This one is up-to-date and quite robust

| | |
|---|---|
| **Pressure P** | **Surface temperature T_G** |
| **Snow height H_SNOW** | **Sea ice fraction FR_ICE** |
| **Height of half levels HHL** | **Soil ice content W_SO_ICE** |

**Mandatory fields**

❑ <u>**Optional (but recommended):**</u> **Soil moisture index SMI** _(It is better to remap soil moisture index than remapping soil water content due to differences in soil type between the two models)_

**w_so  has been preprocessed to soil moisture index SMI using the functions in the mars4icon_smi script**

❑ _iconremap_ has only seen ECMWF and DWD grib files. After setting up an environment where COMET local definitions are linked to DWD definitions  initial data was finally read!!!!

Thanks to Daniel and Florian for the work done