Status of PT AEVUS – Analysis and Evaluation of TERRA-URB scheme

Task Leader: CIRA

COSMO GM 2019
Rome, 10th September 2019
h 16:30 - 18:00

Official start of the task: September 2017

In January 2018 the **COSMO version 5.04g_urb1** has been released and several bugs have been detected.

In April 2018, a SubTask0 has been established in the proposal to give evidence of the debugging activities to be performed. In particular an array of runs has been performed (modifying the model configuration by varying some keys parameters). **Afterwards, the debugging of the beta model version including TERRA-URB was successfully achieved.**

In June 2018, **COSMO version 5.05 (including TERRA-URB)** has been officially released. During the last year, several versions have been released (5.05_urb2, 5.05_urb3, 5.05_urb4) to fix some bugs and a new version of INT2LM (2.05a) has been released too.

In December 2018 Jan- Peter Schulz has been designed as code owner to clearly identify a focal point for debugging activity

An unphysical heating of rural area in the COSMO 5.05urb1/2/3, switching on the TERRA_URB, leads to the unphysical heating even in case of complete absence of urban areas (ISA=0 and AHF=0). The problem was eliminated in 5.05urb4 release (thanks to U. Schaettler).

Currently **COSMO 5.05_urb4** provides satisfactory results for a specific configuration (itype_canopy = 1).

An incorrect behavior of new skin-layer temperature scheme (itype_canopy = 2) leads to the decreasing the air temperature diurnal range instead of its expected increasing. The problem was eliminated after fixing a code bug (thanks to M. Varentsov).

Preliminary tests have reported the high sensitivity of the urban climate simulations to the skin temperature formulation (itype_canopy = 2).

Additionally preliminary test shows have been performed using the new ICON physics.

PT_AEVUS is officially closed on August 20

PT Meeting Agenda

16:30 – 16.35   Opening (J. M. Bettems)
16:35 – 16.40   Introduction (P. Mercogliano)
16:40 - 16:50   "ArpaP activities" by V. Garbero and M. Milelli
16:50 - 17:00   "CIRA Updates" by P. Mercogliano
17:00 - 17:10   "RHM Updates" by M. Varentsov
17:10 - 17:20   "DWD Updates" by J. P. Schulz
17:20 – 17:30   "Cottbus Updates" by A. Will

17:30 - 17:40   Introducing PT_AEVUS II by P. Mercogliano
17:40 - 18:00   General discussion

PT Meeting Agenda

16:40 - 16:50   "ArpaP activities" by V. Garbero and M. Milelli
16:50 - 17:00   "CIRA Updates" by P. Mercogliano
17:00 - 17:10   "RHM Updates" by M. Varentsov
17:10 - 17:20   "DWD Updates" by J. P. Schulz
17:20 – 17:30   "Cottbus Updates" by A. Will

17:30 - 17:40   Introducing PT_AEVUS II by P. Mercogliano
17:40 - 18:00   General discussion