

FPS Convection side meeting @ EGU 2017
24, April 19:00-20:00

Conveners: Erika Coppola and Stefan Sobolowski

Agenda

- 1) Choosing two test cases (one warm season, one cold season);
- 2) Discuss the variable list and output frequency and try to reach consensus.

*** Some additional motivation for the test cases ***

- 1) They provide a first look at our climate-configured models' ability to simulate the gross features of specific events in an ensemble context. They are a starting point for those modelling groups that didn't test the model yet and are needed to cluster the whole ensemble around a common test case. They are not compulsory (the first year of the ERA-interim simulation by summer 2017 is) and are easy to accomplish also for those groups that have already a well tested model.
- 2) This is still necessary to capture the statistics of climate in a cpm framework and before launching into full-fledged climate simulations (e.g. 10-years or more).
- 3) They are a start not an end in themselves but rather an important first step.
- 4) They are not meant to be comprehensive but rather to assess the ensemble's ability to reproduce the timing, intensity, duration and propagation of a few specific events.
- 5) They are meant to be complementary to other "testing" activities such as evaluation of a year or two to examine things like diurnal cycles, seasonality, etc.
- 6) They are a chance to showcase what we do for the convection permitting special issue. Keep in mind the BIG PICTURE!

Minutes

Test Cases (~50 minutes)

- Erika presented the idea for a few test cases, which the CORDEX SAT has requested and many in the consortium believe to be a valuable *first* step.
- Long discussion about the value of such case studies with some in the group arguing for some against.
- Agreed that the aim is not to reproduce previous case studies already done in an NWP context
- The conveners argue that this is an important first step for many modeling groups even if some who are farther along have already honed their configurations.
- This is also an important and relatively easy exercise for inclusion in the CPM special issue.
- Some argument that there is no guarantee that the models will reproduce the large events that were suggested, but evidence suggests otherwise in perfect boundary condition experiments. Also better to find out after a few weeks of modeling (if running a few test cases) rather than after half a year (if running a climate simulation).

- Overall a majority (at the meeting) agreed on the utility of such an exercise.
- Erika presented a well-studied and observed case for the Mediterranean from the HyMEX campaign and we discussed a few options for a cold season test but the best storm Track (Martin 1999) does not have very good overlap with high resolution observations. The other event, storm Kyrill (2007) is well observed but did not really track through the mandatory domain. It was agreed that Kyrill is not ideal for a cold season storm.
- Other suggestions were put forward as well.
 - Marie Piazza suggested a strong event over Austria from 22-25 June 2009 (very good observations, clear large scale features, summer case, see attachment).
 - Dominkus Heinzeller suggested a foehn event from November 4-5, 2014 over Switzerland (good observations, heavy associated precipitation, see attachment).
 - Andrey Martynov had a hailstorm suggestion (more information needed).

Variable List (~10 minutes)

- Discussion on test cases went longer than expected so not much time to discuss variable list.
- Agreed that for the test cases all variables stored at hourly frequency.
- For climate simulations more hourly fields were desired but maybe difficult for all groups therefore we will suggest a staggered variable list (taken from the HyMEX campaign and shown to be sufficient) and, for those who can, a full hourly list.
- *theta* should be switched to *ta* in order to be CORDEX standard (it can easily be converted back with available output)
- CMOR-ised specifications must be found for other variables such as *w*.
- CIN and CAPE formulations have to be determined and should be the same across models.
- Column integrated *graupel* can be added as can *rain water* and *cloud water*. Nobody knew what Samuel meant by "*pristine ice*". Please clarify ☺
- Column integrated *moisture divergence* was desired. Should be possible but must be computed at run time not post-p.

Action Items

- A table of test cases with suggested start times and end times will be circulated, ASAP by **Erika?** We hope all groups can participate. We will include the preliminary results in the article for the cpm special issue.
- WRF, COSMO groups need to look at how their respective models calculate *psl* as there are systematic differences. Erika will provide the calculation used by ECMWF and used in RegCM. Not discussed due to time but brought to our attention by Heimo Truhetz (Thanks Heimo!)
- An updated variable list with full cmor-ised specifications (for all except derived fields) will be circulated by **Stefan, ASAP.**

- Approach for derived variables need to be determined ASAP, but okay if these don't make it into the test cases.

Deadlines

June 1 For test case output for preliminary analysis and presentation at HyMEX conference in July and inclusion in cpm special issue.