

Minutes of 1st Arctic-Cordex meeting (Brussels, Nov. 8, 2013)

Present: Torben Königk (SMHI), Heidrun Matthes (AWI), Günther Heinemann (UT), Paul Loikith (JPL), Mikko Strahlendorff (FMI), Stefan Sobolowski (Bjerknes Centre), Irina Gorodetskaya (KU Leuven), Igor Shkolnik (MGO), Bill Gutowski (ISU), John Cassano (CU), Annette Rinke (AWI), Franz Immler

Organizers: John Cassano and Annette Rinke

1. Each group has given an update about their simulations and analysis. The presented slides will be uploaded on the polar CORDEX webpage which will be developed in coordination with CliC. Also, the overview and plenary talks from John and Annette will be uploaded.

2. Planned new ERA-I 50km simulations

Norway: by end of 2014

CU/ISU: by mid-2014

DMI: by mid-2014

MGO: by mid-2014

We will end up with RCM simulation from 9 groups (RCA4 – SMHI, CanRCM4 – CCCma, CCLM – EMUT, HIRHAM5 – AWI, WRF – CU/ISU, WRF – Bjerknes, HIRHAM5 – DMI, RRCM – MGO). All groups will try to cover the 1979-2010 period. To cover this longer period is important for the analysis of extremes which needs a reference period as advised by H. Matthes.

3. All groups will work to put their data on ESGF as soon as possible after they finished their simulations.

4. For the projections:

We will make sure that we will end up with a good RCM-GCM matrix. Favored GCMs are MPI-ESM, EC-EARTH, CCSM (or CESM), CanESM, NorESM. RCA simulations are ready for all these driving GCMs. The other groups will try to run their RCM with at least one other GCM than their in-house / national model. We will focus initially on RCP8.5.

5. Scientific issues raised:

- Will we run simulations at 50 or 25 km? Most of the groups have not the resources to run 25 km. Running simulations at 25 km will also reduce the number of ensemble members that can be run.

- Should we use nudging and when/how should this be used? Only to levels higher than 850 or 500 hPa? What are the benefits and costs of this? RCA has been run with/without nudging. CU/ISU will also run WRF simulations with and without nudging. T. Königk, J. Cassano, and W. Gutowski will evaluate the nudged versus non-nudged simulations. In the simulation spread sheet, each group should give, if applied, information on the nudging procedure used.

- Will groups downscale projections from different ensemble members from the same GCM to cover the natural variability?

- Issue of stratosphere in regional models: Should we try to accurately represent this? If so, how?

- Need for observations (RCMES - JPL) and use of process-based evaluation taking campaign data into account (G. Heinemann)

6. We agreed on the importance to set up later coordinated coupled atmosphere-ice-ocean simulations. Some models are still in final development/adaptation stage. First, we focus on finishing the atmosphere-only simulations.

7. Discussion of the importance of assessing added value of RCM simulations over GCM simulations. Interesting physical meso-scale processes which are expected to be added value by the RCM simulations include atmospheric boundary layer, cyclones, clouds, marginal ice zone, polynyas.

8. Antarctic CORDEX

Two groups have run Antarctic CORDEX simulations (KNMI and NMT) with another (H. Gallee) interested in these simulations. Involve I. Gorodetskaya in terms of process-based model evaluation.

9. John will collect contact information from for several new polar CORDEX participants: S. Sobolowski (Norway), I. Shkolnik (Russia), H. Gallee (Belgium), etc.

10. Annette will approach CliC to ask for help building up and maintaining a Polar-CORDEX (Arctic and Antarctic) web page/wiki and mailing list.

For the mail list, the involved and interest people can subscribe to get new and exchange information.

The web page will include initially:

- list of all participating groups
- updated list of completed and planned simulations
- details regarding model setup (nudging, etc)
- plots of all model domains
- list of publications related to polar CORDEX

11. John will discuss possible RCMES training session at Lund workshop (June 2014).

12. John will attend the ASSW 2014. He will be in contact with Mikko who is co-chair of next years Arctic Observing Summit organising committee. They will see if some of your actions could be incorporate into the summit program.

13. Annette will attend the next CliC SSG meeting in February 2014 and will give there an update of Arctic Cordex.

John Cassano and Annette Rinke

Nov. 10, 2013