

Session Programme Topic 1

Regional climate system modelling

Convener: Klaus Dethloff, Hans von Storch

Regional climate system models consist of high resolution and complex model components for the atmosphere, ocean, sea ice, land surface, soil, vegetation and aerosol chemistry. Beside external forcing and anthropogenic drivers, internally generated variability within the atmosphere and by atmosphere-ocean-land feedbacks in the regionally coupled system contribute to observed changes.

The first aim of this session is to evaluate the performance of regional climate models against observations for the Arctic, Europe, Asia and other regions, to identify added model values, shortcomings with respect to climate anomalies, climate trends and extremes over the last decades.

A second aim is to analyse the sensitivity of regional climate simulations to initial conditions, large-scale boundary conditions, regional forcings by land-use and aerosol loading, sub-grid scale model parameterizations, internal variability with ensemble members and to quantify the uncertainties for present-day climate simulations and future climate projections.

Monday, 6 October 2014

Umweltforum, Room PH, Plenary Hall ('Großer Saal')

- 14:20 TP1-O-01: Ho-Hagemann, H., B. Rockel, B. Geyer: Different coupling methods for regional atmosphere - ocean simulations
- 14:35 TP1-O-02: Brauch, J., B. Früh, T. van Pham, N. Akhtar, B. Ahrens: Coupling of COSMO/CLM and NEMO in two regions
- 14:50 TP1-O-03: Madsen, K. S., R. Mottram, J. H. Christensen, O. B. Christensen, T. A. S. Rasmussen, M. H. Ribergaard: A coupled model system to examine ocean-atmosphere-sea ice processes in the Arctic: HIRHAM5 - HYCOM – CICE
- 15:05 TP1-O-04: Breil, M., H.-J. Panitz, N. Laube, G. Schädler, C. Kottmeier: Regional Climate Simulations with COSMO-CLM using different soil-vegetation-atmosphere-transfer (SVAT) module
- 15:20 TP1-O-05: Tinz, B., H. Heinrich, L. Gates, G. Rosenhagen, B. Klein, H. Klein, A. Ganske, K. Bülow, N. Schade, J. Möller, S. Hüttl-Kabus: Regional coupled atmosphere ocean modelling in the North Sea region

Poster Session:

Umweltforum, Room G, Gallery, 1st floor: 15:45 – 18:00

- TP1-P-01: Arnault, J., D. Heinzeller, C. Klein, L. Hingerl, J. Bliefernicht, H. Kunstmann: Towards a regional climate modeling system for West Africa: sensitivity studies, input bias correction and hydrological coupling
- TP1-P-02: Stéfanon, M., J. Polcher: Testing coupling techniques for a regional climate model: What are the advantages?
- TP1-P-03: Zhou, X., H. Matthes, A. Rinke, K. Klehmet, B. Heim, W. Dorn, D. Klaus, K. Dethloff, B. Rockel: Evaluation of arctic land snow cover characteristics, surface albedo and temperature during the transition seasons from regional climate model simulations and satellite data
- TP1-P-04: Veljovic, K., F. Mesinger: Improving on large scales within RCM domain: how much does the resolution help?
- TP1-P-05: Sannino, G., A. Carillo, G. Pisacane, V. Artale: On the improvement of the simulated Mediterranean Sea inter-annual variability
- TP1-P-06: Menberg, K., P. Bayer, P. Blum: Subsurface urban heat islands: thermal impact of urbanisation on groundwater
- TP1-P-07: Cavazos-Guerra, C., A. Lauer: The importance of physical parameterizations in WRF to reproduce atmospheric dynamics and BC transport in the arctic region: A sensitivity study
- TP1-P-08: Mathis, M., A. Elizalde, U. Mikolajewicz: Variability patterns of the general circulation and sea water temperature in the North Sea
- TP1-P-09: Zhang, L., T. Zhou: Prediction of East Asian summer tropospheric temperature in ensemble multi-seasonal forecast

- TP1-P-10: Hanf, F. S., A. Rinke, K. Dethloff: Simulation of the South Asian summer monsoon with the HIRHAM5 regional atmospheric model from 1979 until 2012
- TP1-P-11: Ozturk, T., M. T. Turp, M. Türkeş, M. L. Kurnaz: Future Projections of Air Temperature and Precipitation for the CORDEX-MENA Domain by Using RegCM4.3.5
- TP1-P-12: Wechsung, F.: Reassessing the STARS climate scenarios used in climate impact assessments for the Elbe river basin
- TP1-P-13: Huang, B., S. Polanski, U. Cubasch: Evaluation of the Performance of Regional Climate Models from CORDEX-East Asia on simulating the Asian-Australian Monsoon system
- TP1-P-14: Maraun, D., M. Widmann, R. Benestad, S. Kotlarski, E. Hertig, J. Wibig, R. Huth, J. Gutierrez, R. Chandler, R. Wilke: VALUE - a framework to validate downscaling approaches for climate change studies
- TP1-P-15: Kim, S., M.-K. Kim, J. Hyeok Oh, J. Sang: PRIDE model for High Resolution Climate Change Scenario using Outputs of Multi Regional Climate Model in South Korea
- TP1-P-16: Yoon, S., M.-K. Kim, J.-S. Park: Comparison of Statistical Linear Downscaling Models for Monthly Precipitation in South Korea

Tuesday, 7 October 2014

Umweltforum, Room PH, Plenary Hall ('Großer Saal')

- 10:00 TP1-O-06: Maslowski, W., R. Osinski, A. Roberts, J. Clement Kinney, A. Craig: Regional Arctic System Model (RASM) – Added Value, Sensitivity and Future Prospects
- 10:15 TP1-O-07: Niederrenk, L., U. Mikoklajewicz: Modelling today's arctic climate with a regional coupled climate model
- 10:30 TP1-O-08: Anisimov, A., D. Yarovaya: Validation of the RegCM4 regional model over the Eastern European/Black Sea region
- 10:45 TP1-O-09: Sumata, H., R. Gerdes, F. Kauker, M. Karcher, C. Koeberle: Development of ocean-sea ice model for the Arctic by model-data synthesis
- 11:00 TP1-O-10: Schultze, M., B. Rockel, H. v. Storch: Impacts of different aerosol climatologies on the European climate during the last decades
- 11:15 COFFEE BREAK (Umweltforum, Room S8, Seminar room 8, 1st floor)

Umweltforum, Room PH, Plenary Hall ('Großer Saal')

- 11:45 TP1-O-11: Klaus, D., K. Dethloff, W. Dorn, A. Rinke: Adaptation of the HIRHAM5 stratiform cloud parameterization to arctic climate conditions
- 12:00 TP1-O-12: Kraut, I., M. Bangert, C. Kottmeier, B. Vogel, H. Vogel: Impact of Aerosols on the Evolution of a Medcane in November 2011
- 12:15 TP1-O-13: Nikiéma, O., R. Laprise: Energy cycle associated with Inter-member Variability in a large ensemble of simulations with the Canadian RCM (CRCM5)
- 12:30 TP1-O-14: Sommerfeld, A., O. Nikiéma, A. Rinke, K. Dethloff, R. Laprise: Arctic Budget Study of Inter-member Variability using HIRHAM5 Ensemble Simulations
- 12:45 TP1-O-15: Becker, N., U. Ulbrich, R. Klein: Anomalous circulations in an RCM caused by orography
- 13:00 LUNCH BREAK (Umweltforum, Room S8, Seminar room 8, 1st floor)

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Umweltforum, Room PH, Plenary Hall ('Großer Saal')

- 14:55 TP1-O-16: Zhang, W., C. Jansson, P. Miller, B. Smith, P. Samuelsson: Severity of climate change dictates the direction of biophysical feedbacks of vegetation change to arctic climate
- 15:10 TP1-O-17: Rousi, E., C. Anagnostopoulou, K. Tolika, P. Maheras: Present and future of teleconnection patterns affecting the climate of the Mediterranean region

- 15:25 TP1-O-18: Khon, V., I. I. Mokhov, F. A. Pogarskiy, A. V. Babanin, K. Dethloff, A. Rinke, H. Matthes: Projected changes of wind-wave activity in the Arctic Ocean in the 21st century
- 15:40 TP1-O-19: Klein, B., K. Bülow, H. Heinrich, C. Dieterich, S. Hüttl-Kabus, B. Mayer, H. E. M. Meier, U. Mikolajewicz, N. Narayan, T. Pohlmann, G. Rosenhagen, D. Sein, J. Su: Climate change projections for the North Sea from three coupled high-resolution models
- 15:55 TP1-O-20: Rechid, D., B. Eggert, D. Jacob: Range of future perspectives from regional climate change projections