

WG SOILVEG

Overview of TERRA activities

Rapporteur: Merja Tölle

Participants: Daniel Regenass, Marcus Breil, Huan Zhang, Evgenii Churiulin, Danny Risto, Marinna Adinolfi, Maike, Mario Raffa, Jennifer Brauch, Joachim Fallmann, Johann Züger, Jürgen Helmert

Overview

- Highlights Vegetation Urban Hydrology Snow (Merja Tölle)
- FPS LUCAS status (Marcus Breil)
- Validation of the hydrological cycle in Swiss catchments (Daniel Regenass)
- Publications (all)

Highlights Vegetation

- Evgenii Churiulin (evgenychur@gmail.com), CESR University of Kassel:

COSMO Priority Task: Vegetation Atmosphere INTeractions (VAINT)

Improve the current phenology of vegetation and photosynthesis in the COSMO model; prepare the work for a future implementation in the ICON model.

Necessary modules:

- Canopy photosynthesis and stomatal regulation module
- Carbon allocation and plant growth module
- Heterotrophic respiration and litter/soil carbon module

Will be transferred to COSMO-CLM!

- Edouard Davin (edouard.davin@env.ethz.ch), ETH:

LUCAS coordination + performing the COSMO-CLM² simulations for LUCAS, maintenance of OASIS interface with COSMO for coupling with Community Land Model.

Highlights Vegetation

- Merja Tölle (merja.toelle@uni-kassel.de), CESR University of Kassel, JLU:

Coordination of WG SOILVEG, high resolution land use change and climate simulations with COSMO-CLM coupled to TERRA-ML, vegetation and phenology.

- Huan Zhang (huan.zhang@uni-kassel.de), CESR University of Kassel:

High resolution climate model simulations based on ECOCLIMAP for DVMs.

- Marcus Breil (marcus.breil@kit.edu), KIT:

COSMO-CLM with Veg3D, coordination of FPS LUCAS activities in the CLM-community.

- Maike Hacker (mhacker@uni-bonn.de), University of Bonn:

Community Land Model (CLM) in COSMO-CLM/MESSy coupled externally via the MESSy submodel OASIS3MCT. Evaluation of the coupled system.

Highlights Urban modelling

- Joachim Fallmann (joachim.fallmann@kit.edu), Süddeutsches Klimabüro:

Urban modelling, adding air quality!

- Mario Raffa (joachim.fallmann@kit.edu), CMCC:

High resolution urban climate simulations over the main European cities!

- Yunfei Li (yunfei.li@pik-potsdam.de), PIK:

Urban climate using CCLM/DCEP!

- Adam Jaczewski (Adam.Jaczewski@imgw.pl), IMGW:

Application of COSMO-CLM with terra-urb for Warsaw! Extend the work with ERA5 and high resolution geomorphological data.

Highlights Urban modelling

- Johann Züger (Johann.Zueger@ait.ac.at), AIT:

High resolution urban climate simulations including greening scenarios for cities.

Highlights Hydrology/Snow

- Daniel Regenass (daniel.regenass@env.ethz.ch), ETH:

Hydrology parameterization of TERRA!

- Validation of the hydrological cycle in Swiss catchments.
- Numerical and physical aspects of Richards equation in an idealized setup.
- Coupled simulations with different hydrology setups.

- Danny Risto (risto@iau.uni-Frankfurt.de), IAU:

Initialization/parametrization of snow for seasonal forecasting.

Analyzing the skill of operational seasonal forecasts and comparing their snow initialization/parametrization.

Publications

- Marcus Breil

Thank you!

Highlights of talks!

- We have now four presentations related to the SOILVEG group!

The first presentation by Huan Zhang evaluates the COSMO-CLM model driven by ERA5 reanalysis data for Central Europe with respect to the representation of agricultural related extreme events.

Next talk by Marcus Breil is concerned with the summertime warm bias in Southern Europe. When we have two presentations about urban parameterizations in the climate model regarding air quality by Fallmann, and urban climate simulations for Moscow by Varentsov.

Each presentation is about 15 minutes and 5 minutes for discussion. FYI: If you want to ask questions after the talk, please raise hands (option below the list of participants) and do not post your question in the chat as initially announced. Thanks.

We have to make sure that we keep the time frame.

We start now with the presentation with Huan Zhang. Thank you ... next is ...