

Land Surface Processes Course in Blaubeuren, Germany, March 2014



The land surface processes course from March 24th to 28th, 2014 in Blaubeuren gave the IRTG students a special opportunity to understand the interaction between climate and ecosystems.

The IRTG program welcomed members of the University of Tübingen (UT) and the University of Hohenheim (UH), as well as distinguished US researchers.

Description of Course Contents

First Day Lecture: Two lecturers, Daniel Hobbey (University of Colorado) and Todd Ehlers (UT) discussed landscape evolution in the morning and helped students to install and work with the LandLab Modeling software. During the evening discussion, Frederic Herman (Université de Lausanne) explained modeling glacial erosion of mountain topography.

Second Day Lecture: Thilo Streck (UH) and Sebastian Gayler (UT) talked about modeling soil-plant-atmosphere processes and how students can work with Expert-N, a program package for simulating water, nitrogen and carbon dynamics in the soil-plant-atmosphere system.

Third Day Lecture: Matthias Mauder (Karlsruhe Institute of Technology) talked about the boundary layer meteorology and provided some computer exercises in modeling and analyzing Eddy-Covariance flux measurements. During the afternoon session, the IRTG group visited a monastery and the karst spring Blautopf. Afterwards, Ankur Desai (University of Wisconsin) talked about the insights of eddy flux and model experiments on regional biogeochemical-climate feedbacks.

Fourth Day Lecture: Joachim Ingwersen (UH) discussed modeling land surface processes using Noah-MP. In addition the participants gained 'hands-on' experience with Noah-MP. In the evening session, Stefan Metzger (National Ecological Observatory Network, NEON) delineated spatio-temporal rectification of tower-based eddy covariance flux measurements for consistently informing process-based models.

Final Day Lecture: IRTG PhD Students (Maximiliane Herberich, Atefeh Hosseini, Karim Norouzi Moghanjoghi, Chang-Hwan Park), Merit van den Berg (UH), Joe Smith (UT) and Sebastian Knist (University of Bonn) presented their research projects and discussed their methodology.

Overall, this productive course provided students with the opportunity to gain fundamental knowledge about land surface modeling, and its sensitivity to ongoing climate change in terrain, as well as articulated current research and their relationship to their own topic.

