

13.04.2016, 15:15

KlimaCampus Kolloquium

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Insights from high-resolution simulation of cloud feedbacks

Cloud feedbacks are a leading source of uncertainty in the climate sensitivity simulated by global climate models (GCMs). Low-latitude boundary-layer and cumulus cloud regimes are particularly problematic, because they are sustained by tight interactions between clouds and unresolved turbulent circulations.

This talk reviews cloud feedbacks simulated by high-resolution models that simulate the dominant cloud-forming eddy motions in such regimes. Some physical mechanisms responsible for these feedbacks will be discussed, as well as some possible ways to constrain global cloud feedbacks from present-day observations. Overall, high-resolution models support the GCM and IPCC consensus that low-latitude and global cloud feedbacks are positive.

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