



Downscaling of precipitation - need and use of observational data

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Climate projections with global circulation models do not allow regional examinations of water balance or trends of extreme precipitation due to their coarse grid resolution. Therefore, a downscaling of the global simulations to the regional scale is necessary. For a simple statistical downscaling with precipitation of the global model as predictor, observations are needed, whereas pure dynamical downscaling doesn't use any observational data at all. However, observations can be used to remove biases from model predictions involved in the downscaling process. In this presentation we discuss different downscaling methods: Statistical downscaling, dynamical downscaling and downscaling methods involving debiasing on varying grid resolutions. The methods yield different results for downscaled climatologic properties such as rain day frequency, rain day intensity and heavy rainfall proportion.