



Relationship between temperature and precipitation over Europe in EURO-CORDEX regional climate models

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Regional climate models (RCMs) are increasingly used for downscaling of information from the coarse resolution global climate models (GCMs) and for assessment of future climate changes and their impacts at regional scales. However, their ability to simulate observed climate characteristics and uncertainties need to be evaluated before their outputs are applied in subsequent studies. As model errors depend on many factors, complex analyses of model outputs are important. Not only climatological means should be focused on but also other aspects should be assessed. Air temperature and precipitation are two important climate variables whose variations are closely related through various physical processes. The relationship between near surface air temperature and precipitation is very variable. In Europe, the value of correlation strongly depends on location and season.

In present contribution, the climate model's ability to represent the relationship between near surface air temperature and precipitation in the period 1961-2010 is evaluated. Several RCMs driven by different GCMs involved in EURO-CORDEX project are analysed. Observations are represented by E-OBS version 11.0. First, we focus on model performance in simulating the correlation field of monthly and seasonal values. Further, indices representing the relationship between temperature and precipitation based on daily values are employed.