

Title: Assessment of regional climate models performance in simulating present-day climate over the area of the Czech Republic

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Abstract: Today a great attention is turned to climate changes and their impacts. Since eighties the Regional Climate Models (RCMs) are developed for assessment of future climate at regional scales. But their outputs suffer from many uncertainties. Therefore, it is necessary to assess models ability to simulate observed climate characteristics and uncertainties in their outputs before they are applied in consecutive studies. In the first chapters of this thesis the sources of uncertainties in climate model outputs and selected methods of climate models performance evaluation are reviewed. Several methods of model performance assessment are then applied to simulations of the Czech regional climate model ALADIN-Climate/CZ and selected RCMs from the ENSEMBLES project for the reference period 1961–1990 in the area of the Czech Republic. The attention is paid especially to comparison of simulated and observed spatial and temporal variability of several climatic elements. Within this thesis the results of the Czech model are compared with outputs of other RCMs.

Keywords: Regional climate models, uncertainties in model outputs, validation