Geophysical Research Abstracts,
Vol. 10, EGU2008-A-03788, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-03788
EGU General Assembly 2008

Analysis of uncertainties in PRUDENCE regional climate models outputs over the Czech Republic

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The main goal of our research is to study various methods of quantification of uncertainties in regional climate model outputs and to choose a method suitable for the conditions of the Czech Republic. The simulated air temperature from selected PRUDENCE models is used. The first method analyzed is the REA (Reliability Averaging) method published by Giorgi and Mearns (2002). The modification of the method includes a comparison between present-day climate (1961-1990) simulated by the regional climate models and real present-day climate observed in the Czech Republic as well as the assessment of the natural climate variability. Another method analyzed is the analysis of variance of an ensemble of regional climate models outputs proposed in Déqué et al. (2007). This method is based on assessment of contributions of various sources of uncertainty to the total variance of the ensemble. Because in the original paper the models outputs were averaged over areas much larger than the orographically complex area of the Czech Republic, an appropriate way of the data averaging will be suggested.