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Supporting users to implement uncertainty of climate change information in adaptation studies

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There is a growing need to develop climate services both at national and international level, to bridge the gap between the providers and the end-users of climate information. Several national climate services are aiming to serve the local users' needs by creating web portals. Thanks to this trend, the number of available climate data (both measured and modelled) is rapidly growing and often there is not any personal contact between the users and the climate scientists via the web portals. Therefore, it is important to make this service usable and informative and train the potential users about the nature, strengths and limits of climate data.

Within the framework of a national funded project (KlimAdat), the regional climate model projections of the Hungarian Meteorological Service are extended and a representative climate database is developed. Regular workshops are organised, where we get hands-on information about the requirements and give training about climate modelling in exchange. One of the most discussed issue during the workshops is tackling with uncertainty information of climate projections in climate change adaptation studies. The future changes are quantified in probabilistic form, applying ensemble technique, i.e. several climate model simulations prepared with different global and regional climate models and anthropogenic scenarios are evaluated simultaneously.

In order to help the users orienting through the mushrooming climate projections, a user guide is prepared. Topics are e.g. how to select model simulations, how to take into account model validation results and what is the difference between signal and noise. The guideline is based on 24 simulations of the 12-km resolution Euro-CORDEX regional climate models, driven by the RCP4.5 and RCP8.5 scenarios. Two target groups are distinguished based on the required level of post-processing climate data: 1) climate impact modellers, who need large amount of raw or bias corrected data to drive their own impact model; 2) decision makers and planners, who need heavily processed but lightweight data. The purpose of our guideline is to provide insight into the customized methodologies used at the Hungarian Meteorological Service for fulfilling users' needs.