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Global climate model evaluation and selection using the interactive tool GCMeval

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We present the interactive web application GCMeval, available at https://gcmeval.met.no. The tool is a useful resource for climate services by illustrating how model selection affects representation of future climate change. GCMeval was developed in a co-design process engaging users. Based on a thorough analysis of user demands, needs and capabilities, two different user groups were defined: Data users with lots of experience with data processing and Product users with a strong focus on information products. The available data, information, and user interface in GCMeval are tailored to the requirements of the data users.

In the tool, the user can select all or a subset of models from the CMIP5 and CMIP6 ensembles and assign weights to different regions, seasons, climate variables, and skill scores. The tool provides visualizations of the spread of future changes in temperature and precipitation which allows the user to study how the sub-ensemble fits in relation to the full multi-model ensemble and to compare climate model results for different regions of the world. A ranking of individual model performance for recent past climate is also provided. The tool can be used to aid in model selection for climate or impact studies, or to illustrate how an already existing selection represents the range of possible future climate outcomes.