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The MiKlip Decadal Climate Forecast Website

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MiKlip (German: Mittelfristige Klimaprognosen) is a German national project on decadal climate prediction coordinated at the Max-Planck-Institute for Meteorology (MPI-M). The project involves 35 sub-projects spread across 22 German research institutions. The goal of MiKlip is to foster basic research on decadal climate prediction and to develop an operational ensemble decadal prediction system with the Earth System Model of the MPI-M (MPI-ESM) and the regional climate model COSMO-CLM. Since 2017 quasi-operational decadal climate forecasts have been published on a webpage, which is to our knowledge the second web page worldwide providing near-term climate forecasts.

Here we present the MiKlip forecast website, where potential users can interactively retrieve climate prediction information for the next 1 to 10 years, mainly in 4-year mean values. The forecasts show the probable development of the climate in terms of near surface air temperatures globally and regionally with a special focus on Europe and the North Atlantic. A novelty is the combination of the forecast information with its appropriate skill indication. The MiKlip system –initialised with atmosphere and ocean re-analyses of the ECMWF – is evaluated by comparing retrospective forecasts (hindcasts) and two standard reference forecasts (climatology and climate projections) with past observations. A skill traffic light indicates if the MiKlip system is not significantly better (red), significantly better than one (yellow) or significantly better than two (green) of the reference forecasts in the past. The evaluation includes the accuracy (MSESS) of the ensemble mean and the probabilistic skill (RPSS) of the whole 10 member ensemble.

This new climate service for decadal predictions combines interactive applicability with scientific best practice. The webpage provides information about these ensemble mean and probabilistic forecasts of the MiKlip project and the project itself:
https://www.fona-miklip.de