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Climate Predictions @ DWD – towards a seamless climate prediction website

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To support decision-making processes, Germany's National Meteorological Service, Deutscher Wetterdienst (DWD) is developing an operational seamless climate prediction service. Climate predictions from subseasonal to the decadal time scales are consistently presented on a single platform, the DWD climate predictions website (http://www.dwd.de/climatepredictions) [1]. To strengthen the idea of seamless climate information, we are working on a seamless timeseries, which contextualizes climate predictions with observations from the past and future climate projections.

National users from different sectors (e.g. water, energy, forestry, agriculture) regularly take part in the discussion and evaluation process of the DWD climate prediction website. Design and content of the climate service were developed as a co-design with national users.

To meet users' needs regarding spatial resolution, climate predictions on all timescales are downscaled using the empirical-statistical downscaling EPISODES [2]. Presented on the website are bias corrected weekly (subseasonal), 3-month (seasonal) 1- and 5-year (decadal) means of temperature and precipitation on global and national scale. DWD always presents its climate predictions in combination with the corresponding prediction skill.

We provide climate predictions in two categories of different complexity. The "basic climate predictions" offer simplified climate predictions, which will be presented on an interactive platform soon. In a second "expert climate predictions" section, we offer more detailed information on global, European, and national climate predictions.

The newest user-oriented addition on the website will be climate predictions and the corresponding evaluations of soil moisture. This new product is calculated with the AMBAV model [3], which retrieves its input variables from DWD's high-resolution climate predictions. Additionally, user surveys have shown high interest in climate extremes. Currently DWD is working on the publication of several extreme indices concerning drought and heat. Plans for further extensions include multi-year seasonal predictions and multi-model predictions.

[1] A. Paxian, B. Mannig, M. Tivig, K. Reinhardt, K. Isensee, A. Pasternack, A. Hoff, K. Pankatz, S. Buchholz, S. Wehring, P. Lorenz, K. Fröhlich, F. Kreienkamp, B. Früh (2023). The DWD climate

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[2] Kreienkamp, F., Paxian, A., Früh, B., Lorenz, P., Matulla, C., 2018. Evaluation of the Empirical-Statistical Downscaling method EPISODES. Clim. Dyn. 52, 991–1026 (2019). https://doi.org/10.1007/s00382-018-4276-2.

[3] https://www.dwd.de/DE/fachnutzer/landwirtschaft/dokumentationen/allgemein/ambav-20_doku.html