

## **SESSION: (B3) S2D ensemble predictions and forecast information**

**(B3-05)**

### **Evaluation of re-calibrated decadal hindcast using a common verification framework**

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Decadal predictions deal with the time scale which is important for decision makers and infrastructural planners for the near-term future. For usability of those predictions it is important to know about their forecast skill. Recent work suggest verification frameworks to answer the key questions whether initialization of the forecast model leads to higher skill in comparison to the uninitialized simulations and whether the spread of the ensemble represents the forecast uncertainty?

Initialized model simulations typically have to deal with biases which are dependent on forecast lead time, also known as model drift. Additionally, this behavior can depend on initialization time, i.e. bias and drift can be different for simulations which are initialized in the 1960s in comparison to most recent hindcasts.

This study uses a "Decadal Forecast Recalibration Strategy" (DeFoReSt) which adjusts mean and conditional bias as well as ensemble spread, taking lead time and initialization time into account. A common verification framework is used to analyze the skill of decadal hindcasts simulated with the general circulation model MPI-ESM under the umbrella of MiKlip, which is the German initiative for decadal prediction. For near surface temperature and precipitation it is shown how the initialized simulations perform using the lead time dependent anomaly adjustment recommended by the DCP. Furthermore the improvement through the use of the sophisticated post processing procedure (DeFoReSt) is discussed.