



## **Correction of model errors of climate runs based on post-processing techniques**

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It is a common practice to correct the bias of climate runs as a consequence of errors which are systematic in nature. Three types of errors can be identified: initial condition errors, forcing errors and model errors. Intense ongoing research focuses on improving initialization and forcings that most prominently deteriorate the forecasts at seasonal and decadal timescales, respectively (Meehl et al., 2013). Model errors, however, may be important at all timescales and it remains unclear to what extent they impact the predictability of the climate system and how much they can be corrected. We analyse the error growth and post-processing corrections on seasonal up to decadal scale by means of twin experiments in the presence of model errors. The climate model considered is the intermediate complexity model LOVECLIM (Goosse et al., 2010). We explore how the forecast can be improved using different post-processing techniques, including simple bias correction and EVMOS correction (Vannitsem, 2009), an approach that provides adequate corrections for both climatologic mean and variance. We disentangle the bias correction from the variance correction and explore the spatial characteristics of forecast improvement with an emphasis on the southern hemisphere and sea ice. At seasonal scales we focus on atmospheric variables while for the decadal scales the ocean temperature and salinity at the surface and at intermediate depth is considered.

## **References**

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