



Looking for improved seasonal predictions in the extratropics: what is the route ?

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Over recent years, the multi-model ensemble forecasting has been the most efficient strategy to increase the skill of dynamical seasonal hindcasts. It should be emphasized that such a pragmatic approach mainly relies on the fact that different models show different systematic errors. It is thus suggested that individual models can be significantly improved and it is widely believed that the skill of current state-of-the-art prediction systems is still far from its theoretical limit. In the extratropics, a possible path to improved seasonal predictions is the capitalization of additional sources of predictability in the stratosphere and at the land surface through a better coupling with the atmosphere. Nevertheless, it is also likely that the potential related to the ocean-atmosphere coupling has not been fully developed and that another path is through a better simulation of the tropical-extratropical teleconnections. This hypothesis is here explored using an original experiment design in which the CNRM atmospheric GCM is nudged towards the ERA40 re-analysis within the tropical belt. Such experiments allow us to quantify which part of the extratropical climate variability and predictability originates in the Tropics. Results suggest that more skill in the extratropics could be obtained through an improved ocean-atmosphere coupling in the Tropics.