



Do climate indices offer more information on a seasonal to decadal time scale?

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Most non-climate experts are interested in how the future/next season's climate will impact their subject of interest. Hence, the information most users actually need are based on climate indices which describe these impacts. That means, depending on the index of interest, the underlying model data is aggregated and/or thresholds need to be applied before the index can be calculated from the forecast. This has some major consequences in how the raw model data is treated. For instance, the model bias now has a large influence on the skill score as one is not limited anymore to the percentile world only. The question is how one estimates the bias for daily data based on only 30 years of observations. Another question that arises is whether the predictability of such indices is improved or decreased in comparison with the underlying parameter, hence, whether there is a difference in predictive skill between the mean of the underlying parameter (e.g temperature) and the index. As climate indices are often aggregated over time, the forecast might profit from a memory effect that is not present when simply averaging data. Based on the perfect model approach we explore the possible predictability of climate indices and the added value of a bias correction in the mean and variance. We compare the different types of indices, such as aggregated, threshold dependent and count data and what effects these characteristics have on the results.

EUPORIAS, which is embedded in the framework of EU FP7, aims exactly to improve that knowledge and explores the utility of indices in seasonal to decadal forecasting.