



Process-based evaluation of the ÖKS15 Austrian climate scenarios: First results

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The climate scenarios for Austria from the ÖKS15 project consists of 13 downscaled and bias-corrected RCMs from the EURO-CORDEX project. This dataset is meant for the broad public and is now available at the central national archive for climate data (CCCA Data Center). Because of this huge public outreach it is absolutely necessary to objectively discuss the limitations of this dataset and to publish these limitations, which should also be understood by a non-scientific audience.

Even though systematic climatological biases have been accounted for by the Scaled-Distribution-Mapping (SDM) bias-correction method, it is not guaranteed that the model biases have been removed for the right reasons. If climate scenarios do not get the patterns of synoptic variability right, biases will still prevail in certain weather patterns. Ultimately this will have consequences for the projected climate change signals.

In this study we derive typical weather types in the Alpine Region based on patterns from mean sea level pressure from ERA-INTERIM data and check the occurrence of these synoptic phenomena in EURO-CORDEX data and their corresponding driving GCMs. Based on these weather patterns we analyze the remaining biases of the downscaled and bias-corrected scenarios.

We argue that such a process-based evaluation is not only necessary from a scientific point of view, but can also help the broader public to understand the limitations of downscaled climate scenarios, as model errors can be interpreted in terms of everyday observable weather.