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## Statistics of downscaled western Mediterranean precipitation: A multi-model approach

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A quantitative evaluation of the predictability of precipitation over the western Mediterranean basin is given considering the joint errors derived from the use of stateof-the-art Atmospheric General Circulation Models (AGCMs) and downscaling methods. This may yield an indication of the potential predictability that can be achieved under climate change scenarios.

The models from the Atmospheric Model Intercomparison Project 2 (AMIP2) were used to account for the variability of global models. AMIP2 provides a standard protocol for running AGCMs considering common present-day boundary conditions. The sea level pressure generated by 20 different AGCMs from AMIP2 was used as large-scale input for two different statistical downscaling models to obtain precipitation estimates. The downscaling models used include linear (based on Canonical Correlation Analysis) as well as non-linear (based on analog search) techniques.

The results are presented in terms of the Probability Density Function (PDF) of precipitation for the target region and several statistical moments obtained from it. Observed values are compared to those obtained from the direct output from AGCMs, statistically downscaled precipitation and the multi-model estimate. The linear downscaling technique shows a less adequate precipitation PDF and the multi-model estimate outperforms the single model ones.