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## Observational constraints for European climate projections

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Observational constraints involve the combined use of models and observations in order to assess their consistency, and aim to reduce the uncertainty on future climate using past information. Several constraints are investigated with the CMIP5 models and re-examined in the light of newly available CMIP6 data. This includes constraints based on detection-attribution approaches and physically-based constraints, in particular those related to the water cycle (e.g. soil moisture, clouds, snow cover). A wide range of methods is used to provide a probabilistic description of future changes address the issue of combining together multi-model ensembles of projections, and a large number of observational constraints. Uncertainty quantification techniques are used to assess the sensitivity of the results (i) to the used method and (ii) to the internal variability.