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Representation of precipitation extremes and their relationship to modes of climate variability in an ensemble of regional climate models (NARCCAP)

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Observed winter precipitation extremes in North America reveal a significant relationship to large-scale modes of climate variability such as the El Niño-Southern Oscillation (ENSO) and the Pacific Decadal Oscillation (PDO). Based on composite analysis and extreme value analysis including the Southern Oscillation index (SOI) and the Pacific Decadal Oscillation (PDO) index as covariates, we investigate whether the relationship between these modes of climate variability and precipitation extremes is also represented in regional climate models. We use several regional climate model simulations driven by NCEP re-analysis as provided by the North American Regional Climate Change Assessment Program (NARCCAP). This allows for an inter-model comparison as well as for a comparison of the multi-model ensemble with the observed relationship.