Making use of big climate data in risk management and climate change adaptation

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A strategy is suggested for presenting high-resolution temperature maps based on projections from large multi-model ensembles with minimal requirement of data space. This ability to reduce data volumes may be useful for climate services. We present a web-based solution that provides maps with seasonal mean temperatures at 5-minute spatial resolution. The maps were generated from downscaled groups of 223 stations from the Barents region, and were based on results from principal component analysis (PCA) for which the five leading modes represented most of the variance and enabled the extraction of salient features while significantly reducing the data volume. A demonstration of the concept showed how different aspects can be distilled, such as ensemble means, ensemble member differences, point-wise time series, probabilities, quality, and various quality aspects.