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Strategy for generation of climate change projections feeding Spanish impact community

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Over the past decades, the successive Coupled Model Intercomparison Projects (CMIPs) have produced a huge amount of Global Climate Model (GCM) simulations. Along these years, the GCMs have advanced extraordinarily, and can thus provide credible evolution of climate at least at the continental or global scales since they are better representing physical processes and feedbacks in climate system. Nevertheless, due to the coarse horizontal resolution of GCMs, it is necessary to downscale these results to be used by the impact community to assess possible future impacts of climate change and to adopt adaptation strategies at regional and national level. In this vein, the Spanish State Meteorological Agency (AEMET) has been producing since 2006 a set of reference downscaled climate change projections over Spain either applying statistical downscaling techniques to the outputs of the GCMs or making use of the information generated by dynamical techniques through European projects such as PRUDENCE, ENSEMBLES and EURO-CORDEX. The AEMET strategy aims at exploiting all the available sources of information on climate change projections from international projects and initiatives. The generalized use of statistical downscaling approaches allow us to sweep a great number of global models and therefore to produce the best possible estimation of uncertainties. Most impact climate change studies over Spain make use of this reference downscaled projections emphasizing the estimation of uncertainties. Additionally to the rationale and history behind the AEMET generation of climate change scenarios, we present in this communication some preliminary analysis of the dependency of estimated uncertainties on the different sources of data.