

## **Benchmarks for Weather Forecasts in the medium range and beyond.**

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A wide variety of decision support applications beyond week one require relevant benchmarks to provide a measure of "zero-skill" for probabilistic weather forecasts. The limited duration of the historical record, both for meteorological observations and for social-economic observations, places severe constraints on its value as such a benchmark. The cost functions most relevant for social-economic value often have an odd structure when viewed from a meteorological perspective (e.g. the number of days next week on which cement will not set in Berlin). A new "weather generator" is presented. Based on Random Analog Prediction (F. Paparella et al Phys.Lett.A (1997), L. A. Smith, Proc International School of Physics "Enrico Fermi", Course CXXXIII, page 177-246, Italian Physical Society (1997)), ERAP (Ensemble Random Analog Predictions) aims to generate a collections of time series consistent with both the historical distribution and the short range (non-linear) dynamics of the observations. "Weather generator" is something of a misnomer, as one aim is to generate the background (unconditioned) distributions. Applications to a controlled experiment and European temperatures are discussed; this poster will allow a real-time determination of skill at distinguishing actual observations and the time series that feed into the ERAP distributions.