

## **Perturbations in the ECMWF operational ensembles**

*Monday, 5 December 2022 12:00 (25 minutes)*

One of the major advances in weather prediction of the past three decades has been the provision of accurate and reliable uncertainty estimations. This has been achieved by shifting from issuing a single to an ensemble of forecasts. Since the first implementation in 1992, the key questions that we had to address have been ‘what are the sources of forecast error?’, and ‘how are we going to simulate them in the ECMWF ensemble’? In this talk, I will briefly review how we evolved the first version of the operational ensemble that included only the simulation of initial uncertainties over the Northern Hemisphere without considering observation errors, to the current version that in the initial perturbations also considers observation errors, and that takes into account model uncertainties.

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