

“Sculpted Ensembles: Exploiting a Modern Data Assimilation Technique to Enhance Early Warning of High Impact Events”

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Abstract

Modern forecasting systems often employ ensemble approaches to aid in the quantification of the forecast sensitivity of simulation models to slight changes in initial conditions or in parameters. Traditionally, data assimilation has been deployed to determine (ensembles of) initial conditions for a forecast model given observations of the system. Modern data assimilation techniques, however, are sufficiently flexible that they can be applied to points in the future as well as those in the past. In this paper, pseudo-orbit data assimilation or PDA (see Du, H. and Smith, L.A. (2014) 'Pseudo-orbit data

