DATA ASSIMILATION VIA INDISTINGUISHABLE STATES

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A new approach to data assimilation which includes the determination of adaptive observations in a natural way is discussed. This approach arises from the theory of indistinguishable states,and consists for using shadowing trajectories which avoids making any perturbation to the current model state when forming ensembles. The method yields near perfect ensembles within the perfect model scenario. Its weaknesses in the imperfect model scenario are contrasted with the failings of variational approaches and methods based upon the Kalman filter.