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Juan M Restrepo* (restrepo@math.arizona.edu), Mathematics Department, University of Arizona, Tucson, AZ 85721. *Path Integral Approach to Model/Data Assimilation*.

The estimate of a mean history and its uncertainty, for a time dependent process for which there is data and a model, both possibly subject to errors, is well known for Gaussian statistics and linear dynamics.

The path integral formulation is a sampling-based strategy with which to find moments of the a-posteriori probability distribution of the time dependent process. It is especially suited for problems which are far from Gaussian and linear.

I will present the method, its numerical implementation, and its performance is compared to other assimilation techniques on benchmark problems. (Received February 05, 2007)