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**Elaine Spiller\*** ([elaine.spiller@marquette.edu](mailto:elaine.spiller@marquette.edu)), Cudahy Hall, 307, 1313 West Wisconsin Ave, Milwaukee, WI 53233. *Assimilating nonlinear Lagrangian data into a high-dimensional ocean model.*

We will discuss the hybrid particle-ensemble Kalman filter for assimilating Lagrangian data, and apply it to a high-dimensional quasi-geostrophic ocean model. Effectively the hybrid filter applies a particle filter to the highly nonlinear, low-dimensional Lagrangian instrument variables while applying an ensemble Kalman type update to the high-dimensional Eulerian flow field. We will focus on challenges in applying this filter to a high dimensional problem and compare the hybrid filter and Ensemble Kalman filter on some test cases. (Received August 29, 2016)