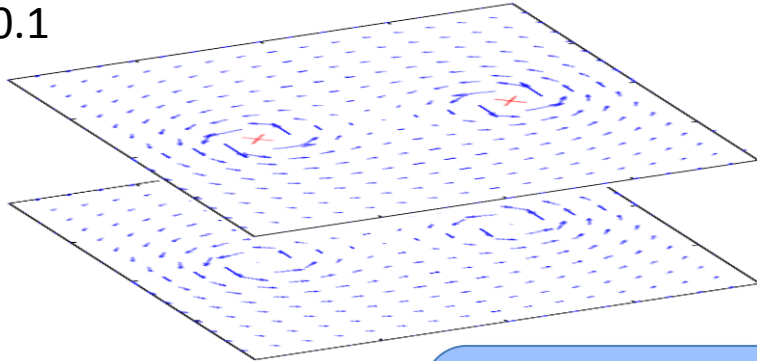


# Assimilation of Lagrangian Data across Layers

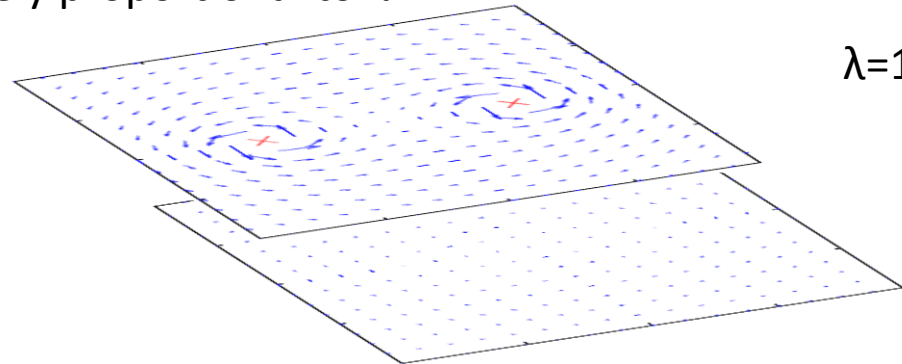
Two point vortices on top layer with coupling to second layer

Coupling strength is inversely proportional to  $\lambda$

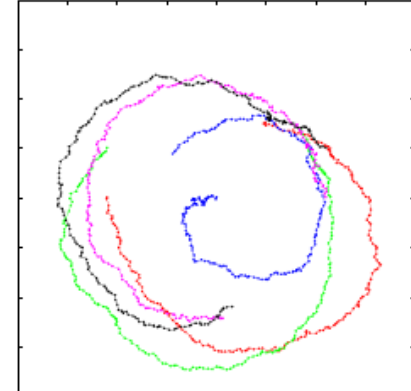
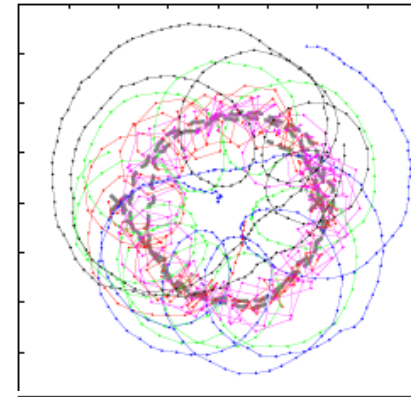
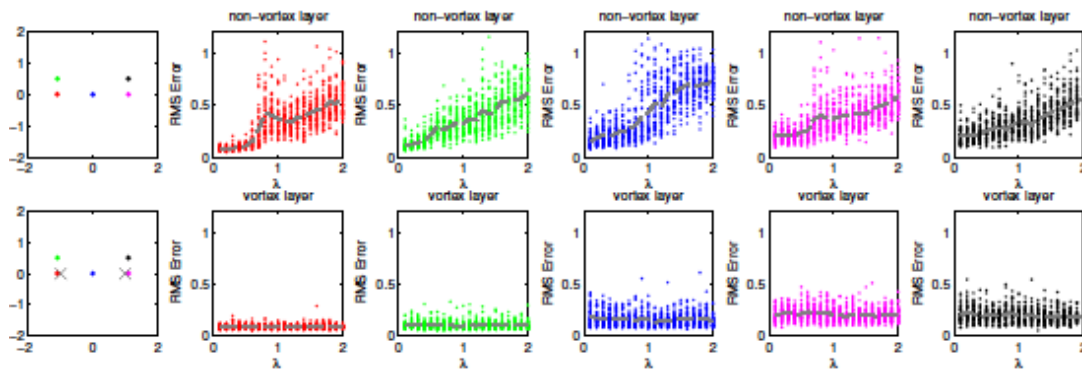
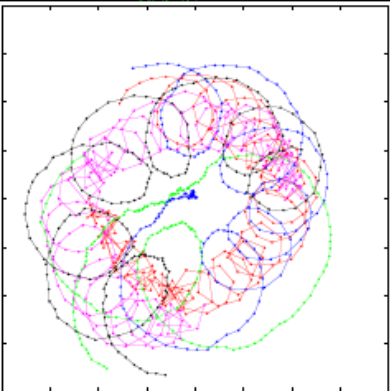
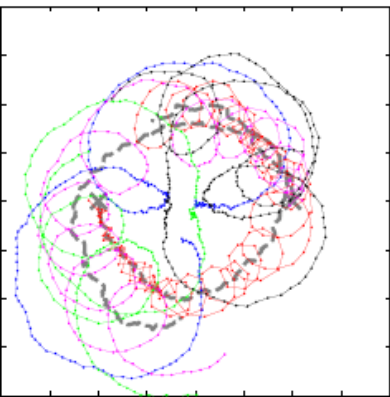
$\lambda=0.1$



$\lambda=1$

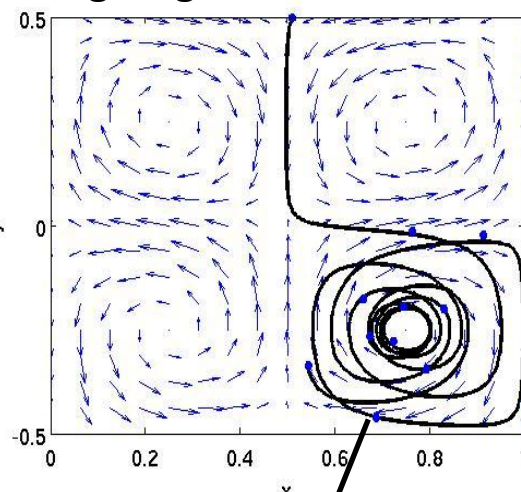


Results: Estimate of RMS error of location of left vortex (upper layer) from assimilating trajectories with initial positions as shown by color correspondence in the two layers

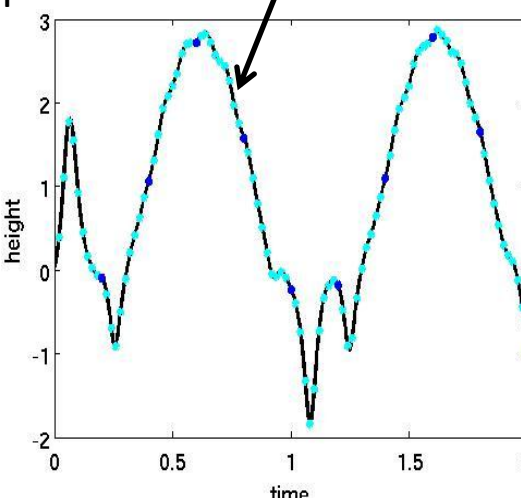


# Variance Reduction via Assimilating En-route Lagrangian Data

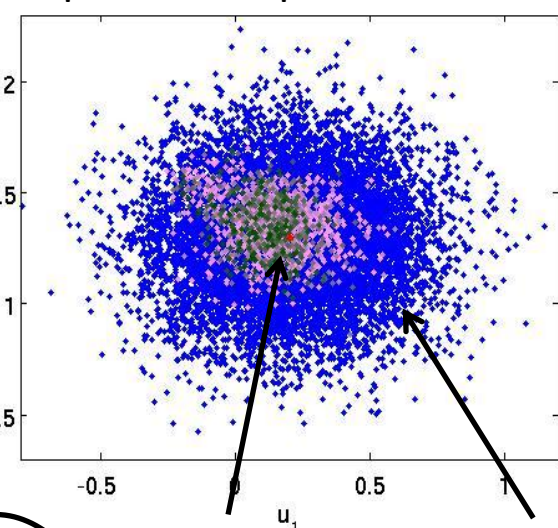
Lagrangian location data



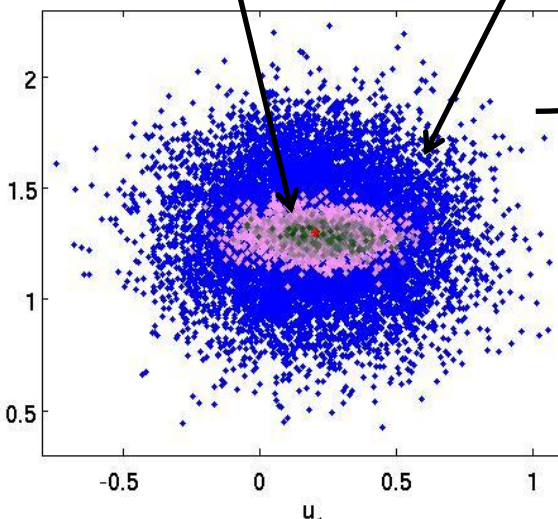
data collected along drifter path



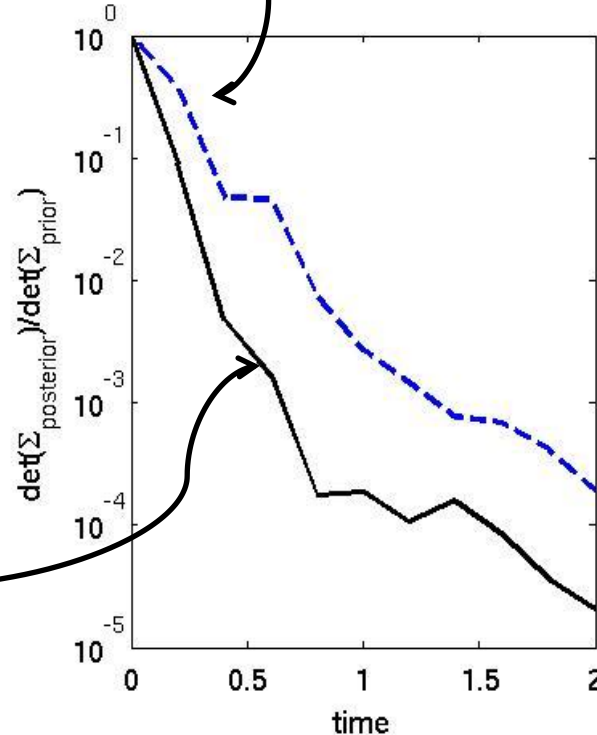
parameter probabilities



en route DA

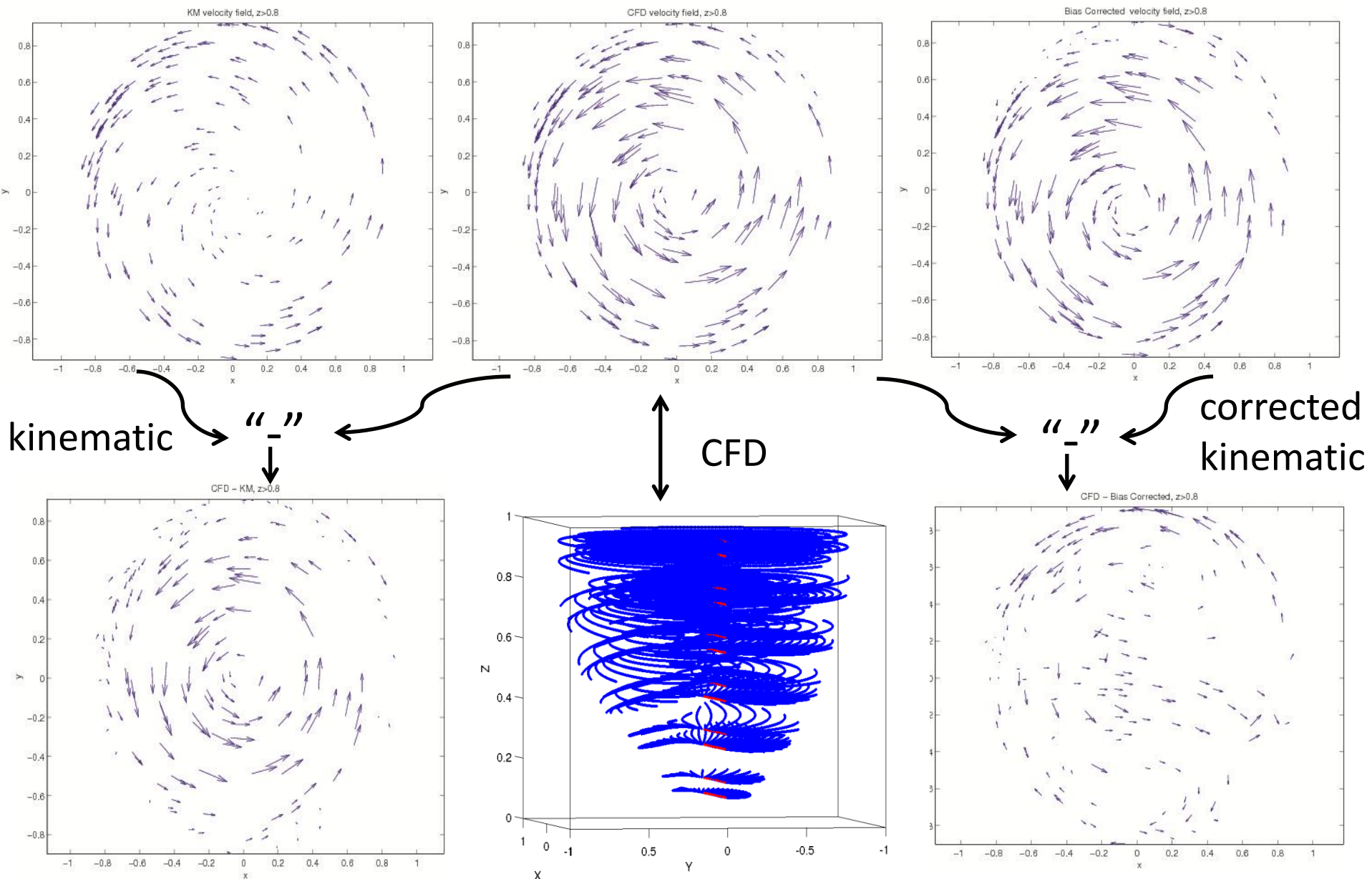


variance reduction



(with Amit Apte)

# Quantifying Model Error for the Rotating Can



(with DW Han)