1157-60-132 **Alfredo Garbuno-Inigo** and **Franca Hoffmann***, 1200 E California Blvd, Pasadena, CA 91125, and **Wuchen Li** and **Andrew M. Stuart**. *Kalman-Wasserstein gradient flows for solving inverse problems.*

We study a class of interacting particle systems that may be used for optimization. By considering the mean-field limit one obtains a nonlinear Fokker-Planck equation. This equation exhibits a novel gradient structure in probability space, based on a modified Wasserstein distance which reflects particle correlations: the Kalman-Wasserstein metric. This setting gives rise to a methodology for calibrating and quantifying uncertainty for parameters appearing in complex computer models which are expensive to run, and cannot readily be differentiated. This is achieved by connecting the interacting particle system to ensemble Kalman methods for inverse problems.

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