

1162-35-118

Jeff Borggaard, Nathan Glatt-Holtz and Justin Krometis* (jkrometis@vt.edu). *A Bayesian Approach to Estimating Background Flows from a Passive Scalar.*

We consider the Bayesian inverse problem of estimating a background flow field from the partial and noisy observation of a passive scalar (e.g., a solute concentration) governed by advection and diffusion. We provide conditions under which the inference is consistent, i.e., the posterior converges to a Dirac measure on the true flow as the number of observations grows large. We also attack the problem computationally by leveraging MCMC methods adapted in recent years to infinite-dimensional settings. (Received August 28, 2020)