

1157-49-203

**Ryan Murray\*** ([rwmurray@ncsu.edu](mailto:rwmurray@ncsu.edu)). *Stein variational descent as a gradient flow: towards a rigorous theory for kernel selection.*

Stein variational gradient descent is a recently developed algorithm for efficiently generating posterior samples in Bayesian statistics. It has been formally derived as a gradient flow, in a modified Wasserstein space, which replaces the  $L^2$  type tangent spaces with reproducing kernel Hilbert spaces. This talk will discuss several directions for analyzing these problems, with a focus on the problem of kernel design. Rigorous analytical results will be presented for different classes of kernels. Some numerical results based upon linearized analysis will also be presented. (Received January 28, 2020)