Flow Transport SMC Samplers
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We design novel global proposals for Sequential Monte Carlo samplers for Bayesian posterior distributions based on approximate mass transport considerations. Gradually introducing the likelihood to move from the prior to the posterior via a simulated annealing temperature schedule gives rise to a curve of target measures. The evolution of these measures is captured in a Liouville equation. An approximate solution to this Liouville equation is proposed that requires only the evaluation of one-dimensional integrals via particle approximations. The vector field thus obtained yields ordinary differential equation proposal dynamics that target posterior modes well in applied examples. Partial results on approximation error bounds are presented along with applications to mixture modeling and truncated Gaussians.