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Riemann Manifold HMCMC for Log-Gaussian Cox Processes

Log Gaussian Cox Point Processes are a rich class of models for clustered point patterns, and are useful and popular for location data which is distributed inhomogeneously. Riemann Manifold Hamiltonian Monte Carlo method produce highly efficient sampling even in very high dimensions where different scaling may be required for the transient and stationary phases of the Markov chain. Some nice properties LGCP with Matern covariance using HMCMC will be explored, along with an application of RMHMC in LGCP with Matern covariance matrix on a high dimensional data set.