

---

**SHIRIN GOLCHI**, Simon Fraser University  
*Sequentially-constrained Monte Carlo*

Imposition of constraints can be a source of challenge in Bayesian modelling. Constraint can be interpreted in a broad sense as any kind of explicit restriction over the model such as positivity of parameters or monotonicity of functions, adherence of the model to a deterministic system or a conservative selection criteria in approximate Bayesian computation. We propose a variant of sequential Monte Carlo algorithm for posterior sampling in presence of constraints. The specific parametrization of the constraints in the model is used to define a filtering sequence of distributions. Particles generated from an unconstrained or mildly constrained distribution are filtered and moved through sampling and re-sampling steps to obtain a sample from the fully constrained target distribution.