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QMC Opening Workshop
August 28-September 1, 2017

Lecture: *Introduction to Sequential quasi-Monte Carlo*

Speaker: Mathieu Gerber

Abstract:

Sequential quasi-Monte Carlo (SQMC) is a quasi-Monte Carlo (QMC) version of sequential Monte Carlo (or particle filtering), a popular class of Monte Carlo techniques used to carry out inference in state space models. In this talk I will first review the SQMC methodology as well as some theoretical results. Although SQMC converges faster than the usual Monte Carlo error rate its performance deteriorates quickly as the dimension of the hidden variable increases. However, I will show with an example that SQMC may perform well for some "high" dimensional problems. I will conclude this talk with some open problems and potential applications of SQMC in complicated settings.