

Stability and approximation of projection filters

Sam Cohen
(University of Oxford)

10 May 2023, 5 - 6pm **c.t.** Berlin time
IRTG 2544: "Stochastic Analysis in Interaction"
— Berlin Probability Colloquium —

Abstract

Nonlinear filtering is a central mathematical tool in understanding how we process information. Sadly, the equations involved are often very high dimensional, which may lead to difficulties in applications. One possible resolution (due to D. Brigo and collaborators) is to replace the filter by a low-dimensional approximation, with hopefully small error. In this talk we will see how, in the case where the underlying process is a finite-state Markov Chain, results on the stability of filters can be strengthened to show that this introduces a well-controlled error, leveraging tools from information geometry. (Based on joint work with Eliana Fausti)



TU Berlin
Institut für Mathematik
Straße des 17. Juni 136
10623 Berlin
MA 041