MATH SEMINAR
RUTGERS-CAMDEN

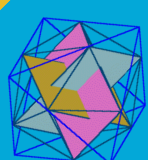
11:20AM -12:20PM, OCTOBER, 20TH, 2023

BSB-132

Dr. Sonja Cox

Korteweg-de Vries Institute for Mathematics, University of Amsterdam

Title: Infinite-dimensional Wishart processes



Abstract: A Wishart process is a stochastic process $(X_t)_{t\geq 0}$ taking values in the space of positive semi-definite matrices such that X_t has a (generalized) Wishart distribution for every $t\geq 0$. Wishart processes were introduced in the '90s by Bru and have become a popular choice for modelling stochastic covariance. For example, Wishart processes are used in multi-dimensional Heston models to describe the instantaneous volatility of multiple assets. Models for energy and interest rate markets involve stochastic \emph{partial} differential equations, and thus call for infinite-dimensional covariance models. In our work, we introduce and analyze infinite-dimensional Wishart processes, and discuss some of their advantages and short-comings.