

Simulation of random fields and stochastic partial differential equations on hypersurfaces

Annika Lang

Whittle–Matérn Gaussian random fields are popular in spatial statistics. They can be interpreted as solutions to specific stochastic PDEs extending the original concept also to manifolds such as hypersurfaces. In this talk, I will discuss the simulation of such and more general random fields on hypersurfaces using surface finite element approximations. We close with an outlook towards time-dependent problems and the use of the methods for the generation of static and time-evolving stochastic manifolds.