ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

A non-stationary spatio-temporal precipitation model for Austria

Corinna Perchtold | JKU Linz

Chaired by Michaela Hitz | Department of Statistics

Wednesday, 6 December 2023 | 10:00–10:30

N.1.43

ABSTRACT

This paper illustrates the main results of a non-stationary spatio-temporal interpolation process of three different precipitation scenarios distributed throughout Austria for the years 1973-1092 and 2013-2022. We model mean and maximum precipitation as well as dry spells with a Gamma, blended generalized extreme value and negative Binomial distribution. A generalized additive model that accounts for influencing covariates as elevation and coordinates of the monitoring stations is rewritten in a Bayesian hierarchical form. The spatial component of the model is represented through the stocastic partial differential equation (SPDE) approach and the temporal one through an AR(1) process. Inference is performed through integrated nested Laplace approximation (INLA) which comes along with a user friendly R-INLA package. The model outputs give insights into (geographical) changes in precipitation patterns over two different time periods.

We hope to see you there!

