

Application of regularization method to the nonstationary GEV distribution

Ijeong Han¹⁾ · Yeonseon Cho²⁾ · Jong-June Jeon³⁾

Recent studies of the extreme rainfall analysis are divided into two main categories: one is nonstationary data analysis over time, and the other is spatial data analysis over region. We present regularization methods of controlling the complexity of a model to account for the temporal and spatial effects in the extreme value model. The nonstationarity over time is captured by the trend filtering and the spatial dependence is modelled by the thin plate splines in the regression model. We also propose an incorporated method to take advantage of both spatial and temporal structure by regularization.

Keywords: generalized extreme distribution, regularization, thin plate splines, trend-filtering

1) Department of Statistics, University of Seoul, Seoul 02504, Korea.

2) Department of Statistics, University of Seoul, Seoul 02504, Korea.

3) Department of Statistics, University of Seoul, Seoul 02504, Korea.