



Department of Decision Sciences

Statistics Seminar

Representations of Max-Stable Processes via Exponential Tilting

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Thursday, 13th October 2016

12:30pm Room 3-E4-SR03 Via Röntgen 1 Milano

Abstract

The recent contribution Dieker & Mikosch (2015) derived important representations of max-stable stationary Brown-Resnick random fields with a spectral representation determined by a Gaussian random field Z . With motivations from Dieker & Mikosch (2015) we derive for some general Z representations for max-stable random fields via exponential tilting of Z and present further new conditions for the stationarity of those processes. We shall discuss several applications of our findings which include a) Dieker-Mikosch representations of max-stable processes, b) two-sided extensions of stationary max-stable processes, c) derivations of tractable representations of max-stable distributions, d) sufficient conditions for max-domains of attraction, and e) calculation of generalised Pickands constants.