Authors: Marek Arendarczyk, Tomasz J. Kozubowski, and Anna K. Panorska
Speaker: Anna K. Panorska

A stochastic model for the sum and the maximum of N dependent, heavy-tail Pareto components

Abstract: We present a stochastic model for (X,Y), where X and Y, respectively, are the sum and the maximum of N dependent, heavy-tail Pareto components. Models of this form, particularly with random N, are desirable in many applications, ranging from hydro-climatology, to finance and insurance. Our construction is built upon a pivotal model involving a deterministic number of IID exponential variables, where the basic characteristics of the joint distribution of (X,Y) admit explicit forms. We present main properties of this model and discuss certain risk measures based on this construction, involving joint tail conditional expectations.

Address information:
Marek Arendarczyk
marek.arendarczyk@gmail.com
Instytut Matematyczny
Uniwersytet Wrocławski
pl. Grunwaldzki 2/4
50-384 Wrocław
Poland

Tomasz J. Kozubowski
tkozubow@unr.edu
Department of Mathematics and Statistics, MS 084
University of Nevada Reno
RENO, NV 89557
USA

Anna K. Panorska
ania@unr.edu
Phone: +775 742 0251 (cell)
Department of Mathematics and Statistics, MS 084
University of Nevada Reno
RENO, NV 89557
USA