



Extremes of Skew-Symmetric Distributions

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In environmental, economic or financial fields, the data of real applications can exhibit highly asymmetric distributions. In risk management it is important to analyse the frequency that extreme events such as floods, heat waves, market crashes, etc., occur. Such real processes are high-dimensional by nature. Estimating the dependence of extreme events is crucial for predicting future phenomena, that can have a large impact on real life.

A simple way of dealing with asymmetrically distributed data is to use the so-called Skew-Symmetric distributions. If the interest is analysing the extremes of such types of data, then probabilistic models and statistical methods based on the paradigms of the extreme value theory are required.

We illustrate different types of dependence models, the so-called extremal-skew models, which can be useful for describing the extremal behavior of asymmetrically distributed data and we show their properties. We discuss the case of random vectors and processes. Finally we describe some statistical inferential methods for estimating the dependence structure of these models.

Keywords: Coefficient of tail dependence, Extremal coefficient, Max-stable distribution; Max-stable process.