A bimodal generalized distribution of extreme values

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Resumo

The generalized distribution of extreme values, known as GEV, is widely used in hydrology and finance to model extreme events. In this work we propose the bimodal GEV model, or BGEV, which generalizes a GEV distribution. The behavior of the BGEV model was studied through the study of its descriptive measures such as: fashion, moments and quantiles. We used the maximum likelihood (MV) method to estimate BGEV parameters. O performance of MV estimators was verified through Monte Carlo simulation experiments. Finally, an application for meteorological data was added.

Referências

[1] Embrechts, Paul; Kluppelberg, Claudia; Mikosch, Modelling Extremal Events: for Insurance and Finance. 3a Ed. Springer, 2013.

[2] Otiniano, Cira; Gonçãlves, Cátia; Dorea, Chang, *Mixture of extreme-value distributions: identifiability and estimation*, Communications in Statistics - Theory and Methods, 46:6528–6542, 2016.

[3] Rathie, Pushpa; Swamee, *On a new invertible generalized logistic distribution approximation to normal distribution*, Technical Research Report in Statistics, Department of Statistics, University of Brasilia, Brasilia, Brazil, 2006.

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