

The Role of Bootstrap Methodologies in the Estimation of a Negative Extreme Value Index¹

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In this work we deal with the estimation, under a semi-parametric framework, of a negative extreme value index, the primary parameter in Statistics of Extremes. This parameter is the shape parameter of the extreme value distribution and is one of the basis for the estimation of other parameters of rare events, like the right endpoint of the model underlying the data, a high quantile, the return period and the probability of exceedance of a high level. We consider a recent class of generalized negative moment estimators of a negative extreme value index. Apart from the usual integer parameter k , related with the number of top order statistics involved in the estimation, these estimators depend on an extra real parameter q , which makes them highly flexible and possibly second-order unbiased for a large variety of models. We are interested on the study a bootstrap method for the adaptive choice of the tuning parameters.

Key Words: Statistics of extremes; semi-parametric estimation; bootstrap methods

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