

Robust Identification Property

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Abstract

We define a *Robust identification property* for a parametric family. It is an extension of the classical identification property. We show how we can use this property in order to study the robustness of an estimator for a given parametric family. This leads to the definition of a worst contamination distribution and an upper bound for the maximum bias allowed by an estimator for a given level of contamination. Several examples are provided to illustrate the use of this new concept. The relation with respect to the maxbias curve [Huber, 1964] is also investigated for the estimation of the location in a normal location parametric family.

keywords: Identification property – Maxbias curve – Robust Identification property – Robust statistics – Worst contamination distribution.

References

P.J. Huber. Robust estimation of a location parameter. *Annals of Mathematical Statistics*, 35(1):73–101, 1964.

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