On Parameter Estimation in Non-Regular Situations of Cusp Type

Sergueï DACHIAN, Université de Lille, Laboratoire Paul Painlevé

Mots-clés : parameter estimation, non-regular models, cusp, limiting likelihood ratio process

We will present several parameter estimation problems dealing with situations when the model depends on the parameter in a non-regular way. The problems correspond to observations of different natures, but having the same type of non-regularity: a cusp. Namely, we suppose that the model is driven by a function which behaves like $a\,|x-\theta|^p + c$, $p \in]0,1[$, in the vicinity of θ. We will see that the considered models give rise to the same limiting likelihood ratio process. So, it seems that (like the regular case and unlike the case of change-point type non-regularity) the limiting likelihood ratio process is universal in presence of a cusp type non-regularity.

Références

[1] Dachian S., Kordzakhia N., Kutoyants Yu.A., Novikov A., "*Estimation of Cusp Location of Stochastic Processes: a Survey*", Statistical Inference for Stochastic Processes, to appear (arXiv:1711.03740).

Sergueï DACHIAN, Université de Lille, Laboratoire Paul Painlevé – UMR 8524, 59655 Villeneuve d'Ascq CEDEX, France