

On Parameter Estimation in Non-Regular Situations of Cusp Type

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Abstract

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 have the same type of non-regularity: a cusp. Namely, we suppose that the model is driven by a function which behaves like $a|x - \theta|^p + c$ 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.