

Estimation of regression functions with peak irregularities and applications

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Abstract

The first part of this presentation focuses on the extension of the local linear fit to the case of non-smooth regression functions, in particular functions with a discontinuity in the first derivative. This includes an intuitive motivation as well as theoretical results and simulations.

In a second part we look at possible applications and refinements of the method. Among other topics we focus on the study of time series where the spectral density is an interesting and useful example of functions with peak irregularities.