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Joint Seminar STAT/ULB

"How to deal with outliers in regression?"

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16:00

Room : c 115 (STAT)

Abstract

The main goal of this talk is to warn practitioners of the danger of neglecting outliers in regression analysis. Indeed, classical estimations may be excessively influenced even by a very limited number of atypical observations. In this article, we propose a Hausman-type test to check for this. The test is based on the trade-off between robustness and efficiency and allows to conclude if a linear least-squares estimation is appropriate or if a robust method should be preferred.

We will focus also on the impact of good leverage points (i.e. points lying close to the regression hyperplane but outlying in the x-dimension). While the types of outliers which do influence regression estimates (vertical outliers and bad leverage points) have been extensively investigated, good leverage points have been largely ignored, probably because they do not affect the estimated regression parameters. However, their effect on inference is far from negligible.