

Ciclo di seminari su:
**AN INTRODUCTION TO ROBUST STATISTICS
AND
ROBUST REGRESSION**

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ABSTRACT CORSO

When applying a statistical method in practice it often occurs that some observations deviate from the usual assumptions. However, many classical methods are sensitive to outliers. The goal of robust statistics is to develop methods that are robust against the possibility that one or several unannounced outliers may occur anywhere in the data. These methods then allow to detect outlying observations by their residuals from a robust fit. In these lectures we focus on high-breakdown methods, which can deal with a substantial fraction of outliers in the data. First we introduce basic ideas and principles of robustness, and illustrate them on estimators of univariate location and scale. Then we give an overview of robust methods for multivariate location and covariance estimation. The third and major part concerns robust techniques for regression analysis. Both theoretical and implementation aspects are covered.

Also computer exercises with the R software are provided.

The course does not require preliminary knowledge of robust statistics. However, basic knowledge of regression analysis is required.