The FSDA Matlab toolbox

An integrated framework to assess and apply robust methods to complex datasets

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What FSDA is for

FSDA (Flexible Statistics for Data Analysis) supports a robust and efficient statistical analysis of data sets, ensuring an output unaffected by deviations from model assumptions or anomalies (outliers) even if they occur in groups.

Distinctive features

- Robust modelling and clustering.
- Robust Bayesian analysis.
- Robust data transformation.
- Modelling of mixture distributions.
- Modern exploratory data analysis.
- Interactive data visualization.

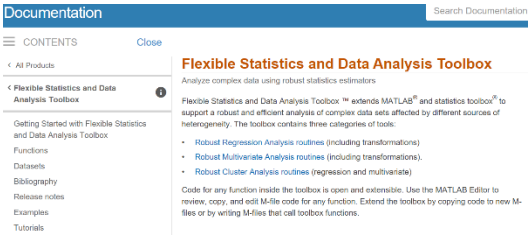
Successful applications

- Anti-fraud.
- Chemometrics (a wide field covering biochemistry, medicine, biology and chemical engineering).
- Production of official statistics (e.g. imputation and data quality checks).
- Text mining.
- Credit risk management.

Featured applications

- ★ Detection of computer network intrusions.
- ★ E-commerce and credit cards frauds.
- ★ Customer and market segmentation.
- ★ Detection of spurious signals in data acquisition systems.

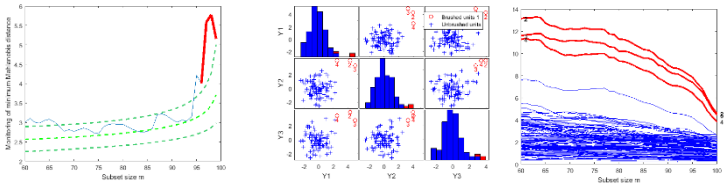
Fully integrated documentation



Statistical domains

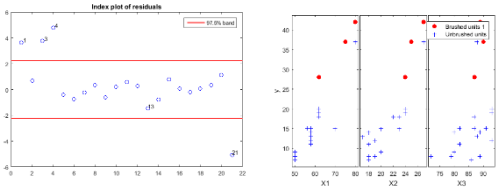
Multivariate analysis

Multivariate outliers and their representation on other plots.



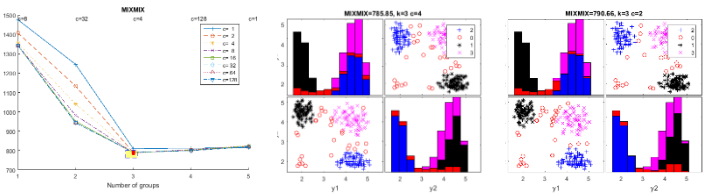
Regression

The index plot of residuals, with outliers highlighted using brushing.



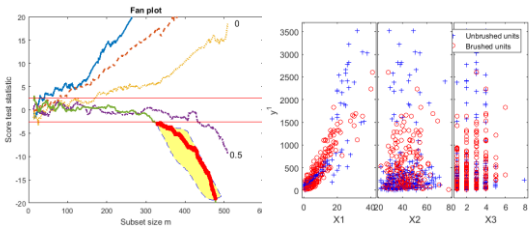
Cluster analysis

Robust BIC criteria to find optimal number of groups.



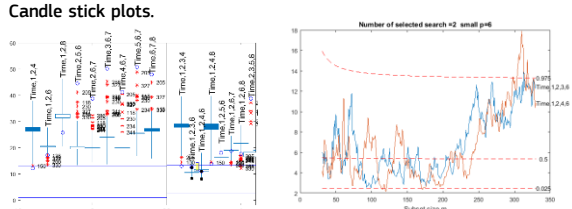
Data transformation

Effect of the outliers on the transformation.



Model selection

Candle stick plots.



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