Explanatory data analysis: (pre-analysis)

Data Process — dataProcess

- Summary report: feature, sample, missingness(warning messages)
- Logarithm transformation with base 2 or 10
- Normalization: bias of MS run
  - Constant normalization
  - Quantile normalization
  - normalization using global standard proteins

Visualization — dataProcessPlots

- Profile plot
- Quanlity control plot
- Condition plot

Model-based analysis: (testing)

Comparisons between conditions — groupComparison

- Lists of adjusted p-values fitted with a variety of models
  - Label-based or label-free
  - Expanded or restricted scope of Biological or Technical replication
  - Account interference transition or not
  - Account unequal variance among features
  - Multiple comparisons

Visualization — modelBasedQCPlots

- Residual plot
- Normal quantile-quantile plot

Visualization — groupComparisonPlots

- Heatmap
- Volcano plot
- Comparison plot

Design of a future experiment

Sample size calculation — designSampleSize

- Sample size calculation: # of biological replicates, peptides, transition; according to FDR and CV
- Power calculation

Visualization — designSampleSizePlots

Model-based Analysis: (quantification)

Quantification — quantification

- Sample quantification
- Group quantification