

# Probability and statistics

## Probability

- Probabilistic models
- Random variables as vectors
- Uncorrelatedness and independence
- Random processes
- LTI filtering of WSS processes
- Ergodicity
- Common probability distributions
- Delta method

## Random processes

- Stationarity

## Methods of estimation

- Methods of estimation
- Minimum mean square error (MMSE) estimator
- Sampling distribution of estimator
- Fisher information
- Confidence interval
- Multidimensional data
- Principal component analysis

## Hypothesis testing

### Parametric hypothesis testing

- Hypothesis testing

### Nonparametric hypothesis testing

- Goodness of fit test
- Kolmogorov-Smirnov test
- Kolmogorov-Lilliefors test

- [QQ plots](#)

## Bayesian probability and statistics

- [Bayesian statistics](#)

## Regression

- [Linear regression](#)
- [Crossvalidation](#)

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