

Goodness-of-fit tests for regression models

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OUTLINE OF THE COURSE

1. Introduction.
 - a) Motivation.
 - b) The distribution case.
 - c) Parametric models.
2. Tests based on the estimation of the regression function.
 - a) The fixed design case.
 - b) The random design case.
 - c) Drawbacks of the smoothing approach.
 - d) Bootstrap approximations.
 - e) Connections with the F test.
3. Tests based on the estimation of the integrated regression function.
 - a) The integrated regression function.
 - b) The marked empirical process.
 - c) Bootstrap approximations.

4. Related setups, extensions and open problems.
 - a) Testing equality of two regression curves.
 - b) Generalized linear regression models with binary response.
 - c) Significance tests.
 - d) Testing partial linearity.
 - e) Testing additivity.
 - f) Goodness-of-fit of regressions models with censored or truncated data.

5. Tests on the spectral domain.
 - a) Time series
 - b) Spatial data