

The main interest of this master thesis is the estimation of location of zeros of the regression function and its derivatives by the parametric and nonparametric method. The first section includes either linear and nonlinear regression model of the parametric methods. The estimators are then based on the estimates of parameters.

The second part includes nonparametric regression model - kernel estimators of the regression function and its derivatives investigated by Gasser and Müller. Especially, the limit distributions of the estimators of zeros and the choice of smoothing parameter and kernel function are studied.

Confidence bands for zeros of regression function and its derivatives are constructed in both sections. Models are studied with independent as well as correlated errors. This master thesis offers examples to particular sections that are computed with software R and also sources of some programmed functions.