Abstract:
The aim of this work is describing theory of smooth transition autoregressive models, namely LSTAR and ESTAR models. The essential part of the work is devoted to the derivation of tests for linearity against the alternative of the relevant nonlinear model. There is also shown how to estimate the parameters of these models along with the selection procedure between the LSTAR and the ESTAR model. A simulation study was carried out, which deals with the power of linearity tests. At the end of the thesis, we applied the theory to some real data and we estimated the appropriate model for their representation.