

This work deals with linear ARMA processes, which are intended to describe the behavior of time series, and also with analysis of selected time series. First, the basic concepts are introduced together with the descriptions of the ARMA models. Further, the Dickey-Fuller test for a unit root, as an approach to the verification of nonstationary time series, is introduced. An important part is the practical application of these models and tests on simulated and real data. Real analyzed data capture developments in the exchange rate of Czech crown against Euro. All calculations were performed in the Mathematica software.