

This work deals with modelling time series, especially their volatility, by methods based on the ARCH model. In the beginning, we describe the general features of financial time series, afterwards we focus on the ARCH model modifications. The described modifications are GARCH, EGARCH, GJR-GARCH and briefly GARCH-M, IGARCH, FIGARCH and QGARCH. Along with the models, there is a description of their behaviour, which frequently reflects some features of financial time series. We also mention the process of practical financial time series analysis. In the end, we demonstrate the application of GARCH, EGARCH and GJR-GARCH models for modelling values of FTSE 100 index together with diagnostic tests and prediction.