

The thesis deals with the modelling of multivariate time series. The SCOMDY model is described. It models individual univariate time series using an ARMA-GARCH, and their dependence structure is modelled using a copula. For copula selection goodness-of-fit test is discussed. Predictions are presented with algorithms for constructing prediction intervals. The whole theory is demonstrated with examples. Monte Carlo simulations verify the suitability and applicability of the theory. The SCOMDY model is applied to a three-dimensional time series consisting of the closing prices of stocks of Apple Inc. Microsoft Corporation and Alphabet Inc.