

There are many non-Gaussian time series models available in the literature. Copula-based time series models are particularly relevant as they can handle serial tail dependence, i.e. the clustering of extreme observations. To date, mainly copula-based Markov time series models that extend the autoregressive time series model have been studied and applied. In this talk, I will consider non-Markovian copula-based time series models that can be viewed as an extension of Gaussian autoregressive moving average (ARMA) models. I derive distributional properties and discuss conditions for stationarity, as well as the asymptotic properties of the maximum-likelihood estimators.

Finally, I evaluate the probabilistic forecasting performance of these models.