

Announcement SoSe 2021

Advanced Seminar

Modeling stochastic volatilities with neural networks and copula models

PD Dr. Aleksey Min

Area/ Module ID:	Mathematical Finance/ MA6015
Content:	In mathematical finance, stochastic volatility can be modelled in different ways. The present seminar considers two different modelling frameworks based on neural networks and dynamic copulas. Remaining topics of the seminar deal with asymptotic properties of estimators and statistical tools for model validation.
Continued next Semester:	No
Participants:	4 students
Prerequisite:	MA4405, MA3702
Literature:	Büchel, P., Kratochwil, M., Nagl, M. and Rösch, D. (2020): Deep calibration of financial models: Turning theory into practice. Link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3667070 Toulis, P. and Airoidi, E. M. (2017): Asymptotic and finite-sample properties of estimators based on stochastic gradients. Link: https://projecteuclid.org/download/pdfview_1/euclid.aos/1498636871 Nasri, B. R, and Remillard, B. N. (2019): Copula-based dynamic models for multivariate time series. Link: https://www.sciencedirect.com/science/article/pii/S0047259X18302008 Lee, D., Zhang, K., and Kosorok, M. R. (2021): The binary expansion randomized ensemble test. Link: https://arxiv.org/abs/1912.03662
Certificate:	3 CP
Seminar dates:	The preliminary online-meeting to the Seminar (Online-Seminarvorbereitung) will take place on January 28, 2021 at 17:00 in ZOOM . Please write an e-mail to min@tum.de to get an access to this ZOOM-meeting.
Seminar venue:	ZOOM