In the summer term 2017 Dr. Thai Nguyen is going to offer the following seminar:

Special aspects of insurance mathematics (master)

Content

In this seminar, we are going to focus on some topics in **insurance mathematics**. We are specifically dealing with decisions under uncertainty, risk measures and premium principles and their use and foundations in actuarial science. The seminar is based on scientific papers that summarize recent results in this area.

It is possible to work on self-proposed topics.

Target group

The seminar is suitable for Master students in *Wirtschaftsmathematik*, *Wirtschaftswissenschaften* or *Finance*. Previous knowledge in *Personenversicherungsmathematik*, *Insurance Economics* and *Finanzmathematik 1* are helpful.

Seminar performance

The seminar performance consists of three parts:

- A seminar presentation about a selected topic with a presentation of the results and some application examples and the moderation of the following discussion. Duration of the presentation: 90 minutes (including discussion). The topics of the presentations are generally assigned to groups of participants.
  The presentation is a performance of the whole group.
- A written formulation of the presentation documents as a support for the participants of a maximum length of three pages.
  Delivery of the presentation documents: at least one week before the presentation via e-mail to thai.nguyen@uni-ulm.de. The creation of the presentation documents is a performance of the whole group.
- Active participation in this seminar.

Based on the performance, every participant will be credited with a grade.

Seminar date

This seminar takes place as a block seminar. The attendance at all seminar dates is required.

Possible papers

The participants of the seminar will receive current research papers which will then be presented in the seminar

1. Bühlmann, H. (1985). Premium calculation from top down. *Astin Bulletin* 15, 89–101.

2. Bühlmann, H. "An economic premium principle." *Astin Bulletin* 11.01 (1980): 52-60.

3. Bühlmann. "The general economic premium principle." *Astin Bulletin* 14.01 (1984): 13-21.

4. Gerber, Hans U. "On additive premium calculation principles." *Astin Bulletin* 7.03 (1974): 215-222.

5. Gerber, Hans U. "On iterative premium calculation principles." *Mitteilungen der Vereinigung Schweizerischer Versicherungsmathematiker* 74.3 (1974): 163-172.

6. M.E. Yaari (1987) The dual theory of choice under risk. *Econometrica*, 55, 95-116.

7. Wang, S. (1996). "Premium calculation by transforming the layer premium density." *ASTIN Bulletin* 26 (1996): 71–92.

8. Wang, Shaun S., and Virginia R. Young. "Ordering risks: Expected utility theory versus Yaari's dual theory of risk." *Insurance: Mathematics and Economics* 22.2 (1998): 145-161.

9. Dhaene, J. and Wang, S. "Comonotonicity, correlation order and premium principles." *Insurance: Mathematics and Economics* 22.3 (1998): 235-242.

10. Goovaerts, Marc J., et al. "A comonotonic image of independence for additive risk measures." *Insurance: Mathematics and Economics* 35.3 (2004): 581-594.

11. Goovaerts, Marc J., et al. "Some new classes of consistent risk measures." *Insurance: Mathematics and Economics* 34.3 (2004): 505-516.

12. S.S. Wang, V.R. Young and H.H. Panjer (1997) Axiomatic characterisation of insurance prices. Insurance: Mathematics and Economics 21, 173-183.

Registration

If you are interested, simply contact Thai Nguyen (thai.nguyen@uni-ulm.de) by (at the latest) **January 29th 2017** with the following information:

- name
- subject of study, number of semesters
- current overview of grades
- Which lectures have you already heard in Actuarial Science, Financial Mathematics and Finance (including the current semester)?

Further information

If you have any questions, please contact Dr. Thai Nguyen (email: thai.nguyen@uni-ulm.de) or visit the homepage of the Institute of Insurance Science http://www.uni-ulm.de/ivw.