Financial control methods applied in insurance

Lectures by Christian Hipp

The five lectures are entitled:

1. Introduction to insurance risk, its control variables, and stochastic control
2. Optimal investment for insurers
3. Optimal control of reins urance and new business
4. Asset liability management via hedging
5. Multivariate control problems in insurance

The list of references is as follows:
(papers not yet published will be distributed during the summer school)

References

1. Optimal investment policies for a firm with a random risk process: exponential utility and minimizing the probability of ruin. Math. Operations Res. 20, 937-958.
2. Hipp, C. and Plum, M. (2000) Optimal investment for insurers. Insurance: Mathematics and Economics 27, 215-228.
3. Hipp, C. and Plum, M. (2003) Optimal investment for investors with state dependent income, and for insurers. Finance and Stochastics, to appear.
4. Hipp, C. and Taksar, M. (2000) Stochastic control for optimal new business. Insurance: Mathematics and Economics 26, 185-192
5. Hip p, C. and Vogt, M. (2002) Optimal dynamic XL reinsurance. Submitted to ASTIN Bulletin.
6. Hipp, C. and Schmidli, H. (2003) Asymptotics of ruin probabilities for controlled risk processes in the small claims case. Submitted to Scand. Actuarial J.
7. Hojgaard, B. and Taksar, M. (1998) Optimal Proportional Reinsurance Polic ies for Diffusion Models. Scandinavian Actuarial Journal 2, 166-168
8. Merton, R. C. (1971) Optimal consumption and portfolio rules in a continuous-time model. J. Econom. Theor. 3, 373-413.
9. Oksendahl, B. (1998) Stochastic Differential Equations, an Introduction with Applications. 5th edition, Springer Verlag
10. Rheinlaender, T. and M. Schweizer (1997) L_2-projection on a space of stochastic integrals. Annals of Probability 25, 1810-1831.

11. Schmidli, H. (1999) Optimal proportional reinsurance policies in a dynamic setting. Scand. Actuarial J., 55-68.

12. Schweizer, M. (1996) Approximation pricing and the variance optimal martingale measure. Annals of Probability 24, 206-236.

13. Taksar, M. (2000) Optimal risk and dividend distribution control models for an insurance company. Math. Meth. Operat. Res. 51, 1-42.