



Mathematisches Kolloquium

Am Freitag, dem 18. Juli 2014 spricht um 14 Uhr c. t. im Hörsaal IV
der Fachrichtung Mathematik (Gebäude E24)

Prof. Dr. Nicole Bäuerle
Karlsruher Institut für Technologie (KIT), Karlsruhe
Joint work with Anna Jaskiewicz and Ulrich Rieder

über das Thema:

Risk-Sensitive Markov Decision Processes with Applications to Finance and Insurance

Abstract: In the first part of the talk we investigate the problem of minimizing a certainty equivalent of the total or discounted cost over a finite and an infinite horizon which is generated by a Markov Decision Process (MDP). The certainty equivalent is defined by $U^{-1}(EU(Y))$ where U is an increasing function. In contrast to a risk-neutral decision maker this optimization criterion takes the variability of the cost into account. It contains as a special case the classical risk-sensitive optimization criterion with an exponential utility. We show that this optimization problem can be solved by an ordinary MDP with extended state space and give conditions under which an optimal policy exists. Interestingly, it turns out that in case of a power utility, the problem simplifies and is of similar complexity than the exponential utility case, however has not been treated in the literature so far. A simple portfolio problem is considered to illustrate the influence of the certainty equivalent and its parameters. At the end, we will also consider risk-sensitive dividend problems.

Der Gast wird von Prof. Christian Bender betreut.

Alle Interessenten sind zum Vortrag herzlich eingeladen.

Kaffee und Tee ab 13.45 Uhr im Konferenzraum der Mathematik (Erdgeschoss, Raum 1.03)

Die Dozenten der Mathematik