

**RESEARCH TRAINING GROUP**

*Stochastic analysis with applications in biology, finance  
and physics*

**Wednesday, 4. January, 2017, 17 Uhr c.t.**

Speaker:

**Moritz Voß**  
**(Technische Universität Berlin)**

Title:

**"Linear quadratic stochastic control problems with singular stochastic  
terminal constraint"**

Abstract: We provide a probabilistic solution to a linear quadratic optimal stochastic control problem with stochastic coefficients and a possibly singular stochastic terminal state constraint on a set with positive but not necessarily full probability. The analysis of such a control problem arises from optimal tracking problems of a given predictable target process where the terminal position is also constrained to match a specific exogenously prescribed random target level on a certain set of scenarios. The main novelty of our contribution is the characterization of the optimal control and the corresponding optimal value by an optimal signal process which reveals not only necessary and sufficient conditions under which the problem admits a finite value, but also allows us to tackle the delicate random singularity at terminal time via a suitable time consistent approximation of the optimization problem.

This is joint work with Peter Bank.

**Place:**

Mathematics building, room MA 004,  
Technische Universität Berlin,  
Strasse des 17. Juni 136, 10623 Berlin

coffee/tea 16.45 Uhr, room MA 721, Strasse des 17. Juni 136, 10623 Berlin