SFB Colloquium Series

It is a pleasure to announce a guest lecture with the title

On Some Regime-Switching Problems in Insurance: What is the challenge?

SPEAKER: **Julia Eisenberg** , TU Wien
TIME: Thursday, 06.10.2022, 11.00 am
LOCATION: JKU Linz, Science Park 4, S4 025

We consider a company who introduces a dependence of its surplus given by a Brownian motion on business cycles (modelled by a 2-state Markov chain). At first, we investigate the case when changes in the economic environment are manifested through company's preference rate - attaining a positive and a negative value. We discuss the problem of dividend optimisation for two different ruin concepts and show how a negative preference or even the threat of switching into a "negative state" affects the optimal dividend payouts. In the second part, we seek to determine the optimal reinsurance strategy minimising the total expected discounted amount of capital injections needed to prevent the ruin. The economy is assumed to evolve in business cycles impacting only the reinsurance price. The constant "once and forever" strategies, optimal for the case of only one state, turn out to be suboptimal. We develop a recursive approach that allows to determine the optimal reinsurance strategies in dependence on the current business cycle.

The lecture will be followed by a general discussion.