## Minisymposium 3 - Stochastic Processes with Jumps: Theory and applications

### Portfolio credit risk with default clustering

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This talk considers a reduced form model for default which incorporates realistic default clustering and allows to derive closed-form solutions to the key ingredients in credit risk modeling: risk-free bond prices, defaultable bond prices (with and without stochastic recovery) and probabilities of survival. We show that all these quantities can be represented in general exponential quadratic forms, despite the fact that the intensity is allowed to jump in a shot-noise style. The main goal is to apply the model to a portfolio of credits, eg for pricing credit indices. The model generalizes the attempt from Duffie and Gârleanu (2001). We show how to price first-to-default swaps, CDOs, and draw the link to currently proposed credit indices.
This is joint work with Raquel Gaspar.