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Modelling Liquidation Risk with Occupation Times

In this talk, we develop a structural model for the liquidation risk of a firm subject to both Chapters 7 and 11 of the U.S. bankruptcy code. The firm's value evolves as geometric Brownian motion. Liquidation is triggered by one of the following two events: (1) the firm's asset value reaches the liquidation barrier and (2) the value process cumulatively stays below the default barrier over a grace period. The main contribution of this talk is the development of analytical formulae for Laplace transforms of occupation time distributions of a drifted Brownian motion with an absorbing barrier. As a result, we develop a semi-analytic formula, easily implemented via quadrature, for the probability of liquidation. In this talk, we also discuss pricing of the firm's debt.