Quantitative Modeling of Market and Counterparty Risk in Financial Institutions

A modeling of market risk (e.g. VaR) and counterparty risk (e.g. EPE) is crucial to the stability, financial well-being, and regulatory compliance of every major banking institution. Risk exposures can be translated into required multi-million dollar regulatory capital holdings, which are used to counteract possible defaults or unfavorable market movements. Throughout this talk, we will introduce some commonly used metrics, discuss their strengths and weaknesses, along with potential modeling challenges. Lastly, we will discuss risk mitigation techniques such as margining and the underlying stochastic calculus.