

Sudden portfolio losses as experienced by many financial institutions in recent years create downside losses materially impacting portfolio and business strategies. This results in highly undesirable consequences of large portfolio losses. Downside losses typically arise from excessive levels of concentration risk in a portfolio that appear too infrequently to be closely managed, but still pose risk. In addition, most risk-assessment approaches focus primarily on a portfolio's volatility, often ignoring the longer-term risks.

In this poster we present a framework that utilizes a latent-factor model of market risk, a security-level simulation engine, and new open source technologies running on a massively parallel high performance computing environment, to quantify forward-looking portfolio risk across multiple risk metrics.