Abstract of the talk of Asmussen

A standard model for the value $S = X_1 + \cdots + X_n$ of a portfolio of $n$ financial positions $X_1, \ldots, X_n$ is $X_i = e^{Y_i}$ where the vector $(Y_1 \ldots Y_n)$ is multivariate normal with possibly dependent components. Thus VaR calculations will need tail probabilities, more precisely of the form $P(S > x)$ in the right tail when the $X_i$ are losses or short positions and of the form $P(S \leq x)$ in the left tail when the $X_i$ are asset values or long positions. The calculation is non-trivial already for the i.i.d. case and I survey various approaches and recent asymptotic results. In particular these include Monte Carlo with variance reduction from either conditioning or importance sampling, saddlepoint approximations involving the Lambert W function and orthogonal polynomial expansions. The talk is based on a series of papers with coauthors Leonardo Rojas-Nandayapa, Jens Ledet Jensen, Patrick Laub and Pierre-Olivier Goffard.