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Optimal Portfolio Problem for Entropic Value at Risk: When the Underlying Distribution is Non Elliptical

In modern portfolio theory, we typically find asset returns that are modeled by a random variable with an elliptical distribution and the notion of portfolio risk is described by an appropriate risk measure. In this joint work, we propose a new stochastic model for the asset returns that are based on Jumps-Diffusion (J-D) distributions. On the other hand, we also propose to use a new coherent risk measure, so-called, Entropic Value at Risk (EVaR), in the optimization problem. For certain models, including a jump-diffusion distribution, this risk measure yields an explicit formula for the objective function so that the optimization problem can be solved without resorting to numerical approximations.