Efficient Simulation of Expected Shortfall and Value at Risk

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Abstract

In this talk, we will study the importance sampling technique for efficient estimation of a few risk measures including Value-at-Risk (VaR) and expected shortfall (ES). Even thought ES is arguably more useful for several reasons, VaR is more popular and well-known. Two approaches are investigated: the exponential embedding approach and the exponential truncation approach. We show that importance sampling estimates derived from truncated exponential distributions yield the best result in a variety of situations. The talk is based on the joint work with Meihui Guo and Shih-Feng Huang.