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Non-Asymptotic convergence rates for the estimation of risk measures

Consider the problem of computing the riskiness of a financial position F written on the underlying S with respect to a general law invariant risk measure (for instance the average value at risk). In practice the true distribution of S is unknown, and one needs to resort to historical data for the computation. In this talk we present rates of convergence results to the riskiness of F(S) when the distribution of S is estimated by its empirical measure given N observations. We will present (sharp) non-asymptotic rates for both the deviation probability and the expectation of the estimation error. This talk is based on a join work with Daniel Bartl.