

1124-60-413

Henry Lam* (khlam@umich.edu), Ann Arbor, MI 48109, and **Clementine Mottet** (cmottet@math.bu.edu), Boston, MA 02134. *Rare Event Analysis via Optimization.*

One recurrent issue in extreme event estimation is the limited data size in the tail region of a distribution. Conventional approaches such as extreme value theory, though mathematically justified, may encounter model misspecification issues due to difficulties in the simultaneous control of bias and variance. In this talk, I will present an alternate approach to compute tail quantities of interest. The approach relies on infinite-dimensional optimizations posited over probability distributions, and mitigate the model misspecification issue via suitable shape and moment constraints. I will develop the solution schemes using some tools in modern high-dimensional optimizations. I will numerically compare this approach to extreme value theory, and discuss some implications in rare-event simulation. (Received September 13, 2016)