

RARE EVENT SIMULATION FOR THE TAIL PROBABILITY OF THE MAXIMUM OF DEPENDENT RANDOM VARIABLES

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We present a new estimator for the tail probability of the maximum of general dependent random variables. This estimator has a very simple form, yet it can achieve a substantial variance reduction. We illustrate that the proposed estimator is highly flexible so it can be applied over a wide variety of dependence structures and marginal behaviors. Moreover, since the proposed estimator is in *crude* form, we can utilize standard variance reduction techniques that yield further significant improvements. We consider a number of examples where we analyze the asymptotic efficiency properties of the proposed estimator in both its crude and improved versions. The Gaussian case is studied in detail.