



Precise large deviations probabilities for a heavy-tailed random walk

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In this talk we will consider the tail probabilities of partial sum processes for stationary processes whose marginal distribution has power law tails. These results generalize the classical results by A.V. and S.V. Nagaev who showed that the "heavy-tail heuristics" applies in this case: the power law tails of the partial sums are essentially due to the maximum term in the sum.

The situation changes in the case of dependent sequences. Then extremal clusters shape the form of the tails of the partial sums. But in contrast to the tails of the maxima, the extremal index does not appear in these quantities. In contrast to the tail behavior of partial maxima there are only very few particular cases where we can determine the tail behavior of partial sums for stationary sequences. We will consider some known cases, compare them with the iid case and indicate how these large deviation results can be used to prove results about ruin probabilities.