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Measure Concentration for Compound Poisson Distributions

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Abstract

We give a simple development of the concentration properties of compound Poisson measures on the nonnegative integers. A new modification of the Herbst argument is applied to an appropriate modified logarithmic-Sobolev inequality to derive new concentration bounds. When the measure of interest does not have finite exponential moments, these bounds exhibit optimal {em polynomial} decay. Simple new proofs are also given for earlier results of Houdr{'e} (2002) and Wu (2000).

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