Title: A new Pareto distribution on integers with applications to modeling discrete insurance risk processes.

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Abstract: We present basic properties and potential insurance applications of recently introduced class of probability distributions on positive integers with power law tails, which are discrete counterparts of the Pareto distribution. In particular, we obtain a probability of ruin in the compound binomial risk model where the claims are zero-modified discrete Pareto distributed and correlated by mixture.

Keywords: compound binomial risk model, heavy tails, mixture, multivariate discrete distribution, power law, ruin probability