ON THE MONOTONICITY OF TAIL PROBABILITIES*

BY

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Abstract. Let S and X be independent random variables, assuming values in the set of non-negative integers, and suppose further that both $\mathbb{E}(S)$ and $\mathbb{E}(X)$ are integers satisfying $\mathbb{E}(S) \geqslant \mathbb{E}(X)$. We establish a sufficient condition for the tail probability $\mathbb{P}(S \geqslant \mathbb{E}(S))$ to be larger than the tail $\mathbb{P}(S + X \geqslant \mathbb{E}(S + X))$, when the mean of S is equal to the mode.

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