A SPECIAL CLASS OF PARTIAL-SUMS DISCRETE PROBABILITY DISTRIBUTIONS

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A generalization of the partial summation

$$\mathrm{P}_i = \sum_{j=i}^{\infty} P_j^*, \qquad i = 0, 1, 2, \ldots$$

is presented, $\{P_j^*\}_{j=0}^{\infty}$ being so-called parent (or generating) distribution and $\{P_j\}_{j=0}^{\infty}$ a descendant (generated) distribution. The summation is mentioned in [3], p.448 and [5].

Relations between the probability generating functions and moments of the parent and descendant distributions are analyzed. It is shown that the geometric distribution is invariant in regard to special cases of the generalized summation.

References

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