

Pólya–Aeppli–Lindley Process

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In this study we introduce the Pólya–Aeppli–Lindley distribution as a mixed Pólya–Aeppli distribution with Lindley mixing distribution. Some properties, probability mass function and recursion formulas are given. Then we define a stochastic counting process with Pólya–Aeppli–Lindley distribution. An equivalent definition as a pure birth process and some additional properties are given. As application, we introduce a Pólya–Aeppli–Lindley risk model, and analyze some properties, ruin probability and deficit at the time of ruin.

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