

Polya-Aeppli process of order k of second kind

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Abstract

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In this paper we propose and study the so called Polya-Aeppli process of order k of second kind. Firstly, the process is defined using probability generating function, followed by its definition as a birth process. The distribution of the related counting process is presented by recursion formulae. The Polya-Aeppli process of order k of second kind is considered within the framework of the risk process and corresponding probability of ruin is studied. Using simulation, some interesting results for the probability of ruin are obtained. Also, a comparison between the Polya-Aeppli process of order k and Polya-Aeppli process of order k of second kind is discussed.

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