Compound Poisson distribution

Def

Given:

Expected Value of random variable in Possion distribution.

Suppose:

are identicially distributed random variables that are mutally independent.

Then PDF of N is:

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which is in the compound Possion distribution.

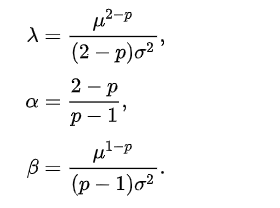
Expected



Variance



where the relationship between and are as follows:



Property

=

Proof:

= = = =

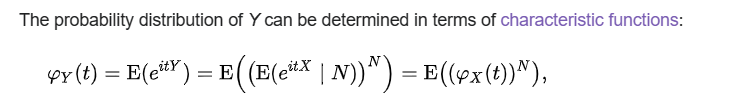
=

Proof:

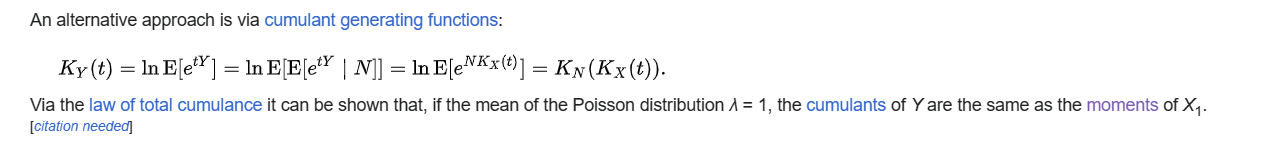
= =

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PGF



CGF



Ref

[Compound Poisson distribution - Wikipedia](https://en.wikipedia.org/wiki/Compound_Poisson_distribution)