

Distribution of discounted compound sums when the mean of inter-arrival time is small

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Lévêillé, G., Garrido, J. and Wang, Y.F. (2009) derived the moment generating function (mgf) for the discounted compound Poisson sums and the mgf for the Erlang (2) inter-arrival times. In this talk, I will show how to calculate the distribution of discounted compound PH-renewal sums by inverting the Laplace transform. A Differential system will be studied for the mgf of discounted compound PH-renewal sums. If the mean of inter-arrival times is very small, obtaining the solution of the differential equations is difficult. Series methods and transform differential equations will be discussed in details. Application such as stop-loss premium, VaR and CTE is also investigated.