

Failure time of non-homogeneous gamma process

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SUMMARY

We consider the non-homogeneous gamma process as a degradation model. The hitting time of a deterministic or random level is studied here. We provide its distribution (both cdf and pdf) explicitly in the first case and in the second case when the threshold is exponentially or gamma distributed. The general case for a random threshold can be approximated by considering mixtures of Erlang distributions. Ageing properties are also discussed.

This is a joint work with Ali Salami (Lebanon).

Keywords: Gamma process, hitting time, random level, special functions

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