

Preservation of ageing classes in deterioration models with independent increments

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SUMMARY

In the present work we consider ageing properties in a deterioration model in which the stochastic process measuring deterioration is a process with independent increments. Preservation of Increasing and Decreasing failure rates (IFR and DFR), as well as Decreasing Reversed Hazard Rate (DRHR) are considered. We also take into account the preservation of log concave and log convex densities. Our main results are based on technical results concerning preservation of log concave and log convex functions by positive linear operators, and include the study of stochastic ordering properties among the random variables in the process.

Keywords: wear process, ageing class, stochastic order, log concavity (log convexity)

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