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Inference for the Wiener process with random initiation time

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SUMMARY

When considering a degradation model, it is mainly assumed that the degradation begins as soon as the device is put into service. However, in practice, sometimes the degradation occurs only after a certain delay called the initiation time (or latency period). In this paper, we consider the Wiener process, as a degradation model, starting at a random time: such a process can also be called a randomly delayed Wiener process. Sample paths are assumed to be observed at the same regular instants. The statistical inference under this sampling scheme is studied here, providing some asymptotic results.

Keywords: Degradation processes, delayed model, random sample size, time-to-failure distribution

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