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A nonlinear Wiener process degradation model with autoregressive errors

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Highlights

- A nonlinear Wiener process with one-order autoregressive (AR(1)) errors degradation model is proposed.
- The effects of model mis-specification regarding the estimation of MTTF are addressed.
- Explicit forms of the lifetime distribution and the mean time to failure are derived.
- Maximum likelihood estimation (MLE) method is adopted to estimate the unknown parameters.
- A comprehensive simulation study and two real applications are given to demonstrate the efficiency of the proposed model.

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