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Statistical inference of a discrete-time Markovian degradation model with time-dependent covariates. (Inférence statistique pour un modèle Markovien de dégradation avec covariables dépendantes du temps.) (French. English summary) [Zbl 1316.62126](#)
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Summary: We propose a discrete-time Markov chain over a finite state space to describe the degradation evolution of an industrial component. Covariates are integrated in the transition probabilities as in a logistic regression. If covariates evolve with time, the model turns to be time-inhomogeneous. Statistical inference for such a model is considered here for a fleet of components observed at several times when covariates are measured at each unit of discrete time. The problem of determining which covariates impact a given transition probability (called hereafter covariates selection) is also discussed.

MSC:

62M05 Markov processes: estimation; hidden Markov models

62N05 Reliability and life testing

62P30 Applications of statistics in engineering and industry; control charts

Keywords:

[covariates selection](#); [multi-states model](#); [visual inspection data](#)

Full Text: [Link](#)