

Statistisches Kolloquium

- Zeit: Mittwoch, 05.02.2014, 16.00 - 17.00
- Ort: Seminarraum SE 101 (Templergraben 90)
- Vortragende: **Prof. Dr. Waltraud Kahle**
Institute of Mathematical Stochastics
Otto-von-Guericke-University Magdeburg
- Titel: Degradation Processes: Modelling, Parameter Estimation, and Preventive Maintenance

Abstract

We consider the Wiener process with drift as a model of damage and degradation. A failure occurs when the degradation reaches a given level h first time. In this case, the time to failure is inverse Gaussian distributed.

Estimators for the parameters of the degradation process and the resulting lifetime distribution are given.

For preventive maintenance, inspections of the degradation are regularly carried out. If at inspection time the degradation is larger than a predefined level a , then the item will be replaced by a new one. For statistical modeling we develop the density of a process increment under the condition that the process has not yet exceeded the level h .

There are three kinds of costs:

- costs of inspection,
- costs of (preventive) maintenance,
- costs of a failure.

In the talk, we consider the problem of defining optimal time intervals between inspections, as well as an optimal replacement level a .

Further, a sequential maintenance policy is considered: At each inspection time, in dependence on the actual degradation level, either a preventive maintenance is carried out, or the optimal time of the next inspection is defined.

In the last part of the talk some ideas about incomplete preventive maintenance are discussed.

Für weitere Informationen wenden Sie sich bitte an:

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