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Detecting changes in Crow-AMSAA reliability predictions

In the semiconductor industry it is required that high-tech equipment has a large uptime due to large costs of production losses. As a consequence, it is important to have accurate reliability predictions of parts of such equipment, so that there are sufficient spare parts available. This is not a trivial task since high-tech equipment may consist of thousands of parts.
It is common in the semiconductor industry to use the Crow-AMSAA model (known in the statistical literature as power-law nonhomogeneous Poisson process) for reliability predictions. To ensure that the reliability predictions stay accurate, it is important to timely detect changes in the parameters of this Crow-AMSAA model. We show how to put this monitoring and detection task in the framework of Statistical Process Monitoring and indicate theoretical and practical challenges for the practical implementation.
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