

## عنوان مقاله:

Application of Accelerated Failure Time Models in Reliability Analysis Considering Dynamic Environmental Conditions

## محل انتشار:

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## خلاصه مقاله:

Historical reliability data are commonly used for reliability analysis of production plants. For this purpose, several handbooks and databases are developed in oil and gas industry, where reliability data of similar oil and gas equipment units are collected. The use of such data without considering the aging effects of components due to varying environmental conditions leads to unreliable results. Developing physics-based models to describe equipment failure rate, as a function of the elements of the operating environment through reliability tests, if not impossible, can be costly and time-consuming. In this study, the concept of accelerated failure time models is adapted to propose an approach, where historical reliability data are analysed while the aging impact of dynamic environmental conditions on the degradation of components is accounted for. That is, the effects of environmental conditions are included as multiplicative factors reducing component failure times. The underlying assumption of this study is that environmental conditions do not change component failure mechanisms. Additionally, this study assumes that corrective maintenance activities remove all the degradation from components so that historical failure times can be considered independent and identical. The results of this study illustrate that the reliability performance of components under varying environmental conditions differs considerably from those exposed to normal conditions.

## کلمات کلیدی:

Environmental conditions, reliability analysis, accelerated failure time model, stress level

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/751614>

