Special Issue

Modelling Dependent Failure Processes

Message from the Guest Editors

One fundamental assumption in traditional reliability models is that the involved failure processes are independent of one another. This assumption, although greatly simplifying the models, does not always hold in practice. For example, it is well known from experimental data that erosion and corrosion can enhance each other, resulting in faster degradation. How to accurately model the failure behaviors with dependency has, then, become an important yet challenging problem in risk and reliability. The present Special Issue is devised as a collection of articles reporting both concise reviews of recently obtained results and new findings produced in this broad research area. The topics covered include but are not limited to: dependent on competing failure process; physics-of-failure-based dependent failure behavior modeling; prognostics and health management considering dependent failure behaviors; system failure modeling considering compent-level dependencies; maintenance optimization considering failure dependencies; life testing and accelerated life testing considering dependent failures.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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