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Advances in Statistical Analysis of Fatigue Data

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Message from the Guest Editors

The development of appropriate statistical methodologies for modelling the fatigue response of components is fundamental to ensure their structural integrity and guarantee safe design. Fatigue is affected by many factors, e.g., type of load, component size, manufacturing defects and type of microstructure, all of which significantly influence the in-service life of the component. These factors contribute to the large scatter shown by the fatigue test data. This intrinsic variability of the fatigue phenomenon must be considered in a statistical framework. Statistical models have been proposed since the beginning of the research on the fatigue response of components. Nowadays, new challenges are to be faced by researchers working in this field.

This Special Issue aims at providing an overview of the recent advances in the statistical modelling of the fatigue response. Papers on innovative statistical models, the comparison between conventional and innovative methodologies, efficient methods limiting the testing time without affecting the design reliability, the estimation of the design curves (at different confidence and reliability levels) and literature reviews are welcome.





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Message from the Editor-in-Chief

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