

## Special Issue

# Estimation and Mitigation of Fatigue Damage for Wind Turbines

### Message from the Guest Editors

Wind turbines are large, flexible structures with complex systems that work under very complicated environmental conditions. They suffer from cyclic loadings and vibrations which cause severe fatigue damage to the structure, reducing the structural service life and increasing the operation and maintenance cost. The further development of technologies to estimate and mitigate the fatigue damage of wind turbines needs proper experimental and numerical analysis and field assessment. This Special Issue invites contributions that address fatigue problems in wind turbines. In particular, articles that describe new methodologies, analytical and numerical tools, and field test methods dealing with engineering problems are equally encouraged for publication. Potential topics include but are not limited to:

- Wind, wake, and wave effects
- Fatigue management by wind farm control
- Fatigue mitigation by model predictive control
- Data-driven/AI method
- Fatigue damage measurement
- Residual fatigue lifetime estimation
- Local fatigue crack analysis
- Fatigue properties of wind turbine material

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### Guest Editors

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### Deadline for manuscript submissions

closed (20 January 2024)



## Machines

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## About the Journal

### Message from the Editor-in-Chief

*Machines* is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided. There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

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### Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso  
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