Special Issue

Aerodynamics Design of Multirotor UAVs

Message from the Guest Editor

Multirotor UAVs are vertical takeoff and landing vehicles featuring complex aerodynamic interactions among multiple rotors, unsteady wake dynamics, and tight coupling between propulsion and control systems. This Special Issue invites original research to advance aerodynamic design using high-fidelity computational and experimental methods. Topics include CFD, vortex particle methods, rotor-to-rotor and rotor-to-wing flow interactions, turbulence, and wake dynamics. Submissions on aerodynamic coefficients, dynamic derivatives, surrogate and reduced-order modeling, hybrid simulation-experiment paradigms, wind tunnel tests, flight data analysis, and uncertainty quantification are welcome. Innovative rotor geometries, optimization methods, and data-driven or machine learning–enabled design solutions are encouraged. Studies linking aerodynamic performance with energy efficiency or environmental impact are also valued. This issue aims to foster interdisciplinary collaboration to develop safe, efficient, and high-performance multirotor systems.

Guest Editor

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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.

Editor-in-Chief

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