



Aerodynamic Numerical Optimization in UAV Design

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Message from the Guest Editor

Contemporary unmanned aerial vehicles (UAVs) are designed with diverse aerodynamic configurations to operate in challenging conditions across various industries. Precision agriculture, construction, environmental monitoring, logistics, mining, oil and gas, search and rescue, security, and surveying are among the industries influenced by UAVs. The development of remote or automated flight and mission controls has superseded manned aircraft in many critical roles. Aerodynamic numerical optimization is essential to enable higher flight speeds, longer endurance, increased payload capacity, and improved operational efficiency, stability, and maneuverability. Optimized designs can also reduce energy consumption and extend flight times, resulting in a positive environmental impact. This Special Issue explores the state-of-the-art advancements and applications of aerodynamic numerical optimization techniques in UAV design to unlock their full potential. With advancements in computational fluid dynamics and optimization methods, traditional approaches to UAV design can be circumvented, and the aerodynamic characteristics of UAVs can be efficiently explored, investigated, and enhanced.





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