Special Issue

Applications of Thrust Vectoring Technology to Drone Systems

Message from the Guest Editor

Drones such as UAVs generally use thrust balance to control their attitude and move by exerting thrust in an arbitrary direction. On the other hand, drones that can move in any direction while maintaining their fuselage attitude have been reported using thrust deflection technologies such as tilt mechanisms, vector nozzles, and omni-positioned propellers. Thrust deflection technology enables stable flight under strong winds, stable approaches to objects during infrastructure inspections, and high-precision position-keeping control during sensing. It also enables high maneuverability, such as hovering while rolling. In addition, thrust deflection technology plays an important role in realizing VTOL-UAVs such as the Osprey tilt-rotor VTOL and tail-sitter. In this Special Issue, we invite papers related to UAVs that apply thrust deflection technology. UAVs with added thrust deflection technology require special considerations not only in terms of fabrication and control methods, but also in terms of interfaces for maneuvering. Papers on airframe structure and control theory, as well as the structure and mechanics of the control interface, are also welcome.

Guest Editor

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Deadline for manuscript submissions

closed (31 May 2024)

Aerospace

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Impact Factor 2.2
CiteScore 4.0

mdpi.com/si/191710

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