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Special Issue Reprint

Mission Analysis and Design of Lighter-than-Air Flying Vehicles

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This Special Issue presents engineers with a summary of the most active lines of research related to the development of lighter-than-air (LTA) technology. The progress that LTA technology is currently experiencing, fostered by the development of electricity-based solutions for propulsion, energy harvesting, and storage with improved power-to-weight and energy-to-weight metrics, has once again triggered investigations into the potential of airships and balloons for diverse missions. However, while emerging technologies have enabled new potential designs and applications for LTA platforms, they have also increased the general complexity of the design and characterization phases when developing a novel airship concept, in turn requiring deeper insight into more technological aspects than in previous decades. In this sense, the present Special Issue offers a glimpse into some of the most interesting aspects of the ongoing research on lighter-than-air flying machines.

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