

Special Session on

Advances in Electrical Machines and Drives for Aeronautic Applications

Organized and co-chaired by:

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Abstract

Electrifying transportation is one of the key solutions to achieving CO₂ emission reduction targets, and the European Union has committed to reaching carbon neutrality by 2050. This electrification effort concerns all types of vehicles, including the aviation sector, which is increasingly moving in this direction. Decarbonizing aviation requires a significant increase in the share of electric power within aircraft, with full-electric propulsion as a long-term objective. To reach this goal, beyond the major constraint of energy storage capacity, it is essential to design powertrains with high power density and high efficiency. Fault-tolerance capabilities must also be addressed to ensure operational safety.

This special session focuses on Electrical Machines and Drives designed for aeronautic applications. Its objective is to share recent advances in electrical machine design, power electronics topologies, and fault-tolerant control. Contributions on multiphase machines—considered a promising solution to meet the demanding constraints of aeronautic systems—are particularly welcome.

Topics of interest include, but are not limited to:

- Electrical machine design for aeronautic applications.
- Multiphase machines and drives for aeronautic applications.
- Power inverter topologies adapted for aeronautic applications.

- Fault analysis of electrical machines and drives.
- Fault-tolerant control of electrical drives for highly reliable aeronautic applications.

Important dates

- Full Paper Submission: February 1, 2026
- Full Paper Notification: May 1, 2026
- Final Paper Upload: June 1, 2026

Submission of papers

Paper submission follows the rules of regular papers. All the instructions for paper submission are included in the conference website:

<https://icem2026.ubi.pt/submission.html>