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Special Session on

Highly reliable electrical drives: Controls, Modulation and Architectures for Reliability

Organized and co-chaired by:

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Call for Papers

In terms of reliability, the interaction between machines and electrical drives, have resulted in important research area such as More Electric Aircraft (MEA), More Electric Propulsion (MEP) and More Electric Engine (MEE). Nowadays the last generation of devices, defined as wide band gap (WBG) semiconductors, such as silicon carbide (SiC) and gallium nitride (GaN), are very commonly used in electrical drives. Their popularity is due to excellent electrical performance. These semiconductors present the capability of turn on/off the device in very fast way. This characteristic allows to change the output electrical drive voltage faster. The high variation of the output voltage (dv/dt) stress significantly the machine winding, reducing the lifetime. This aspect, in particular aircraft applications like MEA, MEP and MEE, introduce an important application limit. This Special Issues intend to collect papers dealing with control design, considerations and comparisons between different architectures and semiconductor technologies.
Original research, state of art analysis and surveys are welcome.

Topics of interest include, but are not limited to:

- Control strategies for improved reliability.
- Electrical drive architecture to reduce dv/dt on machine winding.
- Novel modulation strategies for multi-objective optimization of the drive operation.
- Fault tolerant power electronics
- Ground leakage current and Total Harmonic distortion reduction

Submission of papers: paper submission follows the rules for regular papers. All the instructions for paper submission are included on the conference website https://icem.cc/2024