Special Session on

Electrical Machines Fault Diagnosis During Transient Operation

Organized and co-chaired by:

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Call for Papers

Over recent years, there has been a proliferation of electrical machines fault diagnosis techniques that rely on the analysis of diverse quantities that are captured during transient operation of the machine. For instance, the analysis of current or vibration data during the startup or load transients has been proven to be very reliable to diagnose certain failures of the machine; this approach avoids frequent false indications provided by classical fault diagnosis methods relying on analysis of stationary quantities as well as provides effective discrimination between simultaneous faults or between faults and other phenomena.

In this context, the use of signal processing tools suited for transient analysis is crucial, since they enable to properly analyze the non-stationary quantities and obtain the necessary information for the diagnosis. This is the reason why techniques relying on tools as wavelet transforms, Wigner-Ville distributions, Empirical Mode Decomposition and other methods have proliferated. These modern signal processing techniques provide reliable patterns related to the failure (sometimes under the form of an image), able to be automatically detected by modern pattern recognition algorithms. This fact makes them ideal for their possible implementation in condition monitoring devices. This special session is intended to attract research papers showing studies of electrical machine behaviour during transient regimes as well as novel applications of transient-based techniques in the electric machines condition monitoring area.

Topics of interest include, but are not limited to:

- Analysis of electrical machines during start-up or shut-down.
- Signal processing techniques for transient analysis.
- Signal analysis during load oscillations or speed variations.
- Discrimination between faults or conditions that produce similar harmonics.
- Inverter-fed electrical machines.
- Multiple simultaneous faults diagnosis.

Submission of papers: deadline follows the deadline for the regular papers.
All the instructions for paper submission are included in the conference website:
http://www.icem.cc/2022