ADVANCES IN MULTIPHYSICS MODELING AND SIMULATION OF ELECTROMAGNETIC SYSTEMS

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ABSTRACT

Computational electromagnetics (CEM) plays nowadays a pivotal role in the simulation of most recent technologies, ranging from e-mobility to micro-electromechanical systems (MEMS). Fast prototyping and virtual modeling –used now in most of industrial processes– involve the development of robust, accurate, and efficient software capable of handling the inherent complexity of large discretized CEM models with multiphysics and multiscale behavior.

This session will explore recent advances and approaches in CEM, including finite element methods, boundary element methods, integral equation methods, hybrid approaches, domain decomposition techniques, multiphysics and multiscale methods, analytical and circuit-based approaches, AI-based simulation techniques, model order reduction, stochastic modeling, large-scale modeling and parallel computing, optimization and sensitivity analysis.