

From Component To Mission... Simulation as Must-Have for Aerospace & Defense Industry

Machine Learning in Electromagnetic Engineering: Application to Antenna Design and EMC on Complex Platform

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Abstract:

The aerospace and defence industry is at a pivotal crossroads, facing an unprecedented operating environment and a need to exponentially innovate. Simulation helps aerospace companies by delivering solutions that accelerate their digital transformation to meet their most critical operational and technological initiatives. Many companies have realized the power of simulation and its potential to achieve both these goals.

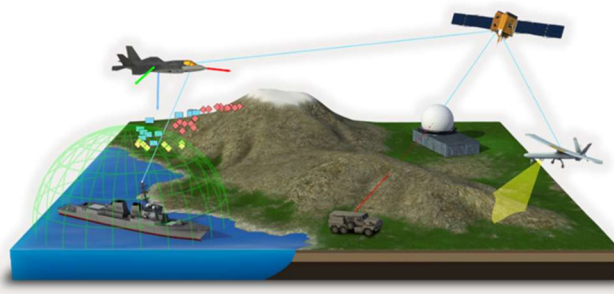
The number of parameters that play a significant role in the “electromagnetic performances” of a practical device or subsystem could be so large that conventional analysis and design methods do not cope with both functional and certification challenges. In this seminar we present a design approach based on Machine Learning and Metamodels of Optimal Prognosis to explore efficiently the N-parameters Design of Experiment Space to ascertain the impact on

the EM performances of each parameter and to select the design that better fit with the design requirements.

The method will be applied to the design of 5G antenna and to the assessment of the radiated field emitted by a hand- assembled cable for automotive application.

Workshop outline:

This workshop will be a technical session, in which the keynote speakers will discuss technologies of high fidelity modeling techniques for Aerospace and Defence application:



as well as application of Machine Learning and Metamodeling to electromagnetic engineering problems.

