

Modelling tools for scattering and antennas problems

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The Surface Integral Equation is one of the most used methods in the simulation of electromagnetic problems. Its implementation combined with a fast multipole algorithm (MLFMM) and iterative solvers leads efficient and accurate methods for the analysis of radar cross section (RCS) for a target.

Different methods (MLFMM, ACA, Domain Decomposition Method ...) and formulations EFIE (Electric Field Integral Equation), MFIE (Magnetic Field Integral Equation), CFIE (Combined Field Integral Equation) and GCSIE (integral formulations inherently well-conditioned using a regularizing operator) were implemented at ONERA.

In this talk, we will present various applications obtained with our tools like radar cross section (RCS), antenna radiation, ...

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