ID de Contribution: **3** Type: **Non spécifié**

Boundary Element Solutions of Electromagnetic Problems Based on Helmholtz Projectors

vendredi 5 février 2016 15:10 (35 minutes)

Integral equation solvers are widely used for simulating electromagnetic scattering and radiation from metallic and penetrable objects. Long popular in academic circles, these solvers have been in recent years incorporated into several commercial electromagnetic analysis and design tools, after the advent of fast multipole and related algorithms. The effectiveness of these solvers notwithstanding, boundary element methods are often plagued by several issues related to ill-conditioning and numerical instabilities both for low and high frequencies.

This talk will focus on a new family of schemes which can effectively solve several of these issues. These solvers are based on implicit discrete Helmholtz decompositions obtained via suitably defined projectors. The use of these projectors, we will briefly delineate, allows to obtain electric/magnetic/combined Calderon equations with peculiarly favorable properties (both in frequency and time domain), efficient wavelet preconditioners, as well as Calderon-like approaches that do not require the use of dual boundary elements.

Orateur: ANDRIULLI, Francesco (Télécom Bretagne)