

The PML Method and Fast Solvers for the Helmholtz Equation in Unbounded Domain

Zhiming Chen, Chinese Academy of Sciences

Wave scattering is ubiquitous in modern scientific and engineering applications. One of the fundamental problems in the efficient simulation of wave scattering phenomena is the reduction of the exterior problem which is defined in the unbounded domain to the problem in the bounded domain. We shall introduce the idea of perfectly matched layer (PML) for truncating wave scattering problems and report our progress in designing fast solvers for large wave number discrete Helmholtz equations using the idea of PML method.

This talk is based on joint works with Xueshuang Xiang.