Abstracts

An efficient mixed algorithm of L-MEI and DDM for the wave scattering by a concave cylinder

Xiaoxing Yin and Wei Hong. "An efficient mixed algorithm of L-MEI and DDM for the wave scattering by a concave cylinder." 2002 Microwave and Wireless Components Letters 12.2 (Feb. 2002 [MWCL]): 63-65.

In this paper, a localized MEI method (L-MEI) is developed and combined with the domain decomposition method (DDM) for the simulation of scattering by a concave cylinder. In the L-MEI, the whole domain is decomposed into many subdomains. Different from the conventional MEI method, the MEI coefficients of the L-MEI method in each subdomain are only dependent on the localized metrons that are defined in the subdomain. The localization of metrons has the following advantages: (1) speeding up the calculation of MEI coefficients and saving memory, (2) making the MEI method available for concave structures, and (3) obtaining a band sparse matrix directly without any modification.

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