

Pole condition: Numerical solution of Helmholtz-type scattering problems with far field evaluation

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We consider electromagnetic scattering problems, modeled by the Helmholtz equation on unbounded domains. A central task is the numerical solution of the exterior problem and its coupling to the interior problem. In this talk we present a numerical realization of the pole-condition method, a new approach to the solution of the exterior problem. The method provides a representation formula for the far field and is applicable to certain types of inhomogeneous exterior domains. The pole condition is coupled with a finite element method for the interior domain. Numerical examples illustrate the convergence of the method.

References:

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