An efficient Wave Based Method for solving Helmholtz problems in three-dimensional bounded domains

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Abstract
This paper discusses the use of a Wave Based prediction method for the analysis of time-harmonic interior acoustic problems. Conventional element-based prediction methods, such as the finite element method, are most commonly used, but they are restricted to low-frequency applications. The Wave Based Method is an alternative deterministic technique which is based on the indirect Trefftz approach. It is computationally very efficient, allowing the analysis of problems at higher frequencies. Numerical validation examples show the enhanced computational efficiency of the Wave Based Method as compared to conventional element-based methods.