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Calculation of the EM Fields for scattering from Large Cavities.

Open cavity recessed in an infinite ground plan can serve as a model of duct structures such as jet engine intakes of an aircraft or antenna windows embedded in complicated structures. The phenomena are governed by the Helmholtz equation in an infinite domain along with the radiation condition and Perfect Electric Conductor boundary conditions. The prediction and reduction of Radar Cross Section (or echo area) of this structure are very important and require the information of the fields in a board range of frequencies. In this talk, the asymptotic technique is applied finding the solution of the problem and an efficient algorithm is designed base on it. (Received September 14, 2008)