Abstracts

Analysis of cylindrical waveguide discontinuities using vectorial eigenmodes and perfectly matched layers

In this paper, we analyze the scattering at discontinuities in cylindrical waveguides, starting from a vectorial eigenmode expansion and by introducing perfectly matched layer (PML) boundary conditions. The structure under study is enclosed in a metal cylinder to discretize the radiative mode spectrum, while the coating of this cylinder with PML vastly reduces the influence of parasitic reflections at the metal. This allows for a model that is both faster and more accurate than previous models.

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