

Integral equations for metasurface design

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Abstract

Among the different ways to solve Maxwell's equations, integral-equation approaches are probably offering the most physical insight. They allow the prediction of surface waves and their transformation into leaky waves. We will explain how integral equations can be turned into a direct design tool, beyond traditional field analysis. This allows the design of metasurfaces with prescribed radiation patterns, as well as the creation of multi-beam metasurfaces. Such a perspective on numerical methods may also serve other fields of engineering.