

Download Parabolic Equation Methods Electromagnetic Propagation

A parabolic reflector, dish, or mirror is a device that is used to collect or project energy such as electromagnetic waves. Alter incoming plane waves traveling along the same axis as the parabola into a wave that is spherical and they all meet at the focus of the reflector. Finite-difference time-domain or Yee's method (named after the Chinese American applied mathematician Kane S. Yee, born 1934) is a numerical analysis technique used for modeling computational electrodynamics (finding approximate solutions to the associated system of differential equations). A waveguide is a structure that guides waves, such as electromagnetic waves or sound, with minimal loss of energy by restricting expansion to one dimension or two. A cosecant squared pattern can be achieved by two or more horns feeding a parabolic reflector. Every feed horn already emits directionally. If one distributes the transmit power unevenly on the single radiating elements, then the antenna pattern approaches a cosecant squared pattern.