Abstracts

Modeling of Cylindrical Dielectric Resonators in Rectangular Waveguides and Cavities (Dec. 1993 [T-MTT])

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The mode matching method is used to accurately model a generalized cylindrical dielectric resonator structure in a rectangular waveguide or cavity. The field distributions of different modes in cavities are given. The resonant frequencies of the cavities are calculated and compared to the measured data, showing very good agreement. The resonator structure can be a dielectric disk resonator, a ring resonator, a dielectric resonator with support, etc. This structure can be used in filter design as the basic element, which provides very good mechanical stability. The slot coupling between cavities is also analyzed, showing some interesting results.

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