Abstracts

Weakly Coupled Dielectric Resonators

J. Van Bladel. "Weakly Coupled Dielectric Resonators." 1982 Transactions on Microwave Theory and Techniques 30.11 (Nov. 1982 [T-MTT]): 1907-1914.

The resonant modes of a pair of coupled resonators of high epsilon/sub r/ are considered in the limit of large spacings D between resonators. Attention is focused on the lowest "magnetic-moment" mode, where the coupling effect leads to a split of the original mode into an even and an odd part. Formulas are obtained for the coupling coefficient, the resonant frequencies and Q of the modes. They are strikingly similar to those for weakly-coupled R-L-C circuits. The accuracy of the formulas is verified by comparing their predictions with direct numerical data, available for coupled circular cylindrical resonators.

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