

Accurate full wave analysis of open hemispherical resonators loaded with dielectric layers

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Rotationally symmetric inhomogeneously loaded open resonators are analyzed using the finite difference frequency domain method. State of the art or entirely new techniques are proposed to achieve high accuracy of numerical computations. These include conformal modeling of boundaries and dielectric interfaces, application of the Arnoldi method combined with FIR digital filters, and numerical dispersion correction. As a result the final solution error is as low as 0.013%.

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