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Radiation from an Impedance Loaded Parallel-Plate Waveguide

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Filiz BİRBİR and Alinur BÜYÜKAKSOY
Gebze Institute of Technology,
Department of Mathematics,
PO Box 141, Gebze, Kocaeli-TURKEY

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 [Authors](#)



elektrik@tubitak.gov.tr

Abstract: A hybrid method consisting of employing the mode matching method in conjunction with the Fourier transform technique is used to analyze the radiation of the dominant TEM-wave from an impedance loaded parallel-plate waveguide. The hybrid method that we adopt here reduces the related boundary value problem to a scalar modified Wiener-Hopf equation of the second kind. The solution involves infinitely many unknown constants satisfying an infinite system of linear algebraic equations susceptible to a numerical treatment. Some computational results illustrating the effects of various parameters on the radiation phenomenon are also presented.

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