

RADIATION LOSSES IN A PLANAR DIELECTRIC
WAVEGUIDE WITH A ROUGH INTERFACE
BETWEEN DIELECTRIC LAYERS

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S u m m a r y

Without the weakly guiding fiber approximation, a statistical model of light scattering by a rough surface in a planar dielectric waveguide has been developed. The dependences of radiation losses on the refractive index contrast, the waveguide core thickness, and the correlation characteristics of a scattering surface have been studied. The difference between the scattering of TE and TM modes has been analyzed, and the two-dimensional model was shown to be not suitable for quantitative estimates of losses in the case of TM modes.