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UNDAMPED PROPAGATION OF ELECTROMAGNETIC SURFACE WAVES ON THE INTERFACE BETWEEN LEFT-HANDED METAMATERIAL AND DISSIPATIVE DIELECTRIC

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Abstract

The properties of surface electromagnetic waves (SEW) propagating along a planar structure consisting of an ideal dielectric, a dielectric layer with large losses and a high dielectric constant, and a left-handed metamaterial with “amplification” are studied. All media are isotropic. Dispersion relations for the eigenmodes of such a waveguide structure are obtained. The possibility of full compensation of the energy losses of surface waves is demonstrated.

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