

Surface wave propagation along a metamaterial slab

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Abstract

Surface wave propagation along a metamaterial slab having negative permittivity and permeability is analyzed. The dispersion relations are determined for the TM and for the TE (odd and even) modes. The Brillouin diagrams are drawn and show that, for odd modes, after cutoff, there is an initial frequency range for which there are two possible propagation coefficients. All the even modes exhibit the same behaviour except the first one. In this case, a band-pass region appears, suggesting that the device could be used as a filter.