

Discrimination of Modes of Double- and Single-Negative Grounded Slab

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Abstract : In this paper, we investigate theoretically the waves propagation in a lossless double-negative grounded slab (DNG). This study is performed by the Transverse Resonance Method (TRM). The proper or improper nature of real and complex modes is observed. They are highly dependent on metamaterial parameters, i.e. $\epsilon_{_r-negative}$, $\mu_{_r-negative}$, or both. Numerical results provided that only the proper complex modes (i.e., leaky modes) exist in DNG slab, and only the improper complex modes exist in single-negative grounded slab.

Keywords : double negative grounded slab, real and complex modes, single negative grounded slab, transverse resonance method

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