Abstracts

Modes of Propagation in a Coaxial Waveguide with Lossless Reactive Guiding Surfaces

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An analysis of the modes that can propagate in a coaxial waveguide with Iossless reactive guiding surfaces is presented. The cases where both the surfaces are either inductive or capacitive and the case where one of the surfaces is capacitive and the other is inductive are discussed. The results show that, in general, there are two surface waves and an infinite number of waveguide modes. Whereas all the waveguide modes show the cut off phenomenon, the surface waves may either propagate down to zero frequency or get transformed into the lowest order waveguide mode at certain critical frequencies determined by the structure parameters.

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