

Fourier-Bessel Expansions of Electromagnetic Fields in Chiral Cylindrical Structures

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To handle electromagnetic wave propagation in a semi-infinite, perfectly conducting, chiral cylinder with a circular base, on which an harmonic Bessel beam impinges, we present a theory relying on the Fourier-Bessel expansion of electromagnetic fields. The chiral medium is successively described by the Tellegen and Post constitutive relations. Conditions of wave propagation are discussed.

Key words: Fourier-Bessel; Electromagnetic Field; Chiral Cylinder.