

Negative-definite Media

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The class of negative definite (ND) media is a subclass of lossless bi-anisotropic media with negative definite medium six-dyadic. Thus, it generalizes the class of media which has recently come under great interest, variably labeled as that of double-negative media, negative-index media, backward-wave media, Veselago media or left-handed media. Among examples the class of uniaxially chiral ND media is specially considered. It is shown that the eigenfields are generalizations of TE and TM polarized fields and the Poynting vector of each eigenfield makes an obtuse angle with the propagation vector. When propagating along or transverse to the axis, the eigenwaves are pure backward waves.