

Abstract Submitted
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Nonlinear Spectral Singularity and Laser Output Intensity for the TE and TM Modes¹ HAMED GHAEMIDIZICHEH, ALI MOSTAFAZADEH, Koc University — The nonlinear spectral singularity arising from a Kerr nonlinearity is explored in [Phys. Rev. A 87, 063838 (2013)]. This reference studies the effect of nonlinearity in Lasing condition and shows that Kerr nonlinearity with spectral singularity for a normally incident wave provides an explanation of lasing at gain coefficient g . Lasing occurs when it exceeds threshold gain g_0 . For oblique waves, Ref. [Phys. Rev. A 91, 043804 (2015)] looks at the behavior of threshold gain coefficient g_0 which is given by the condition that there is a linear spectral singularity. We investigated imposing the condition of the existence of nonlinear spectral singularity in the *TE/TM* modes of a mirrorless slab of gain materials and studied the θ -dependence of intensity.

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