Abstracts

Microwave Radiation from Ferrimagnetically Coupled Electrons in Transient Magnetic Fields

F.R. Morgenthaler. "Microwave Radiation from Ferrimagnetically Coupled Electrons in Transient Magnetic Fields." 1959 Transactions on Microwave Theory and Techniques 7.1 (Jan. 1959 [T-MTT]): 6-11.

Under certain restrictive conditions it appears that ferrimagnetically coupled electron spins are capable of coupling energy from a transient magnetic field and giving it up in the form of microwave radiation. This paper analyzes the behavior of the uniform precession of motion in ferromagnetic insulators under the influence of transient magnetic fields of changing amplitude and direction. The expected radiation power and efficiency are calculated for such an oscillator employing yttrium iron garnet.

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