Abstracts

Magnetic Waves for Microwave Time Delay-Some Observations and Results

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Some topics of exchange-coupled spin waves and magnetostatic waves in narrow line width ferrimagnetic materials for electronically variable time delay of microwave signals in the microsecond realm are discussed. The excitation problem is treated by use of transmission-line analogs. A method of excitation of spin waves by microscopic geometries is suggested, and an estimate of its efficiency given. Results of experiments of magnetic wave excitation in axially magnetized YIG rods are presented. Here very strong excitation of signals with high dispersion and microsecond time delay that is a sensitive function of H/sub dc/ were found. These signals possess most of the characteristics predicted for Fletcher-Kittel waves. Other signals, with less dispersion and a much more slowly variable time delay, were also found.

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