Abstracts

Coherent Excitation of Plasma Oscillations in Solids

D. Pines. "Coherent Excitation of Plasma Oscillations in Solids." 1961 Transactions on Microwave Theory and Techniques 9.1 (Jan. 1961 [T-MTT]): 89-92.

Considerations are put forth concerning the feasibility of observing the coherent excitation of plasma oscillations in a two-component plasma of electrons and holes in semiconductors or semimetals. By coherent excitation k meant the onset of a high-frequency ("two-stream") instability arising from an appreciable drift of electrons vs holes under the action of an applied electric field. Conditions favorable to coherent excitation include a sizeable difference in electron and hole masses, and long relaxation times for both kinds of particles. The extent to which such conditions are present in InSb is discussed.

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