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Transition Radiation From a Monoenergetic Electron Bunch on the Acoustic Superlattice

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We consider the forward transition radiation generated by a monoenergetic electron bunch in a dielectric plate in presence of ultrasonic waves. The expression for the spectral-angular distribution of the radiation intensity is given for the general case of electrons distribution in the bunch. Various special cases are discussed and the coherence effects are investigated. Conditions are specified under which the coherent radiation exceeds the incoherent part. The numerical examples are given for a plate of fused quartz.

Primary author: Dr PARAZIAN, Vahram (Institute of Applied Problems in Physics)

Co-author: Prof. SAHARIAN, Aram (Institute of Applied Problems in Physics)

Presenter: Dr PARAZIAN, Vahram (Institute of Applied Problems in Physics)

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