

Radiative instability of a relativistic electron beam moving in a photonic crystal

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The radiative instability of a beam moving in a photonic crystal of finite dimensions is studied. The dispersion equation is obtained. The law $\Gamma \sim \rho^{-1} \left(\frac{1}{s+3} \right)$ is shown to be valid and caused by the mixing of the electromagnetic field modes in the finite volume due to the periodic disturbance from the photonic crystal.

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