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Features of Radiation from Relativistic Electrons Flying Through a Cylindrical Target

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The results of Geant4 simulations of the spectral and angular distributions of the radiation generated by a charged particle crossing a cylindrical target are presented. Previously, experimental studies of the spectral angular distribution of coherent Cherenkov radiation in the sub-terahertz frequency range from a cylindrical Teflon resonator generated by an electron beam with an energy of 3.6 MeV in the AREAL accelerator have been conducted. In this presentation, we will compare the experimental data with theoretical estimates and Geant4 simulations results.

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