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Coherent Grating Transition Radiation in sub-THz Wavelength Range

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Grating transition radiation (GTR), which is a backward radiation, emitted by electrons interacting with a diffraction grating was first observed at optical wavelength region at 1999 [1].
In this report we present the experimental investigation of spectral and orientation dependences of a coherent GTR (CGTR) in sub-THz wavelength region emitted by a 8 MeV electron at KEK LUCX facility. The CGTR spectral line shapes up to 5-th diffraction order were measured for different inclination angles (theta=0-25 deg) with grating period 4 mm.

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