IPAC'24 - 15th International Particle Accelerator Conference



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Initial status report on BNL ATF AE131 experiment harmonic nonlinear inverse Compton scattering

Tuesday, 21 May 2024 16:00 (2 hours)

Recent progress of basic study on Harmonic nonlinear Compton scattering in Brookhaven National Laboratory Accelerator Test Facility (BNL ATF) will be reported. Experiment is conducted by counter collision of a multi TW CO2 laser and 60-70 MeV electron beam having 300-600 pC of charge per pulse. Experiment AE131 is intended for two aspects of experimental demonstrations. A: Nonlinear bi harmonic effect seen in external lasers having shorter wavelength such as Nd:YAG laser induced by a long wavelength intense CO2 laser at scattered photon energy of 100 keV range. B: Detailed study on the harmonic radiation induced by circularly polarized multi TW CO2 laser which potentially contain the Orbital Angular Momentum at photon energy of 10 keV range.

Footnotes

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North America

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