## Abstract Submitted for the DPP08 Meeting of The American Physical Society

Measuring the bunch duration of ultra-short, mono-energetic electron beams with coherent transition radiation in the infrared region WILLIAM SCHUMAKER, University of Michigan, JEAN-RAPHAËL MARQUÈS, NICOLAS BOURGEOIS, LULI - France, SANDRINE DOBOSZ, TIBERIO CECCOTTI, PASCAL D'OLVEIRA, FABRICE REAU, ARNAUD ANDRE, PHILIPPE MARTIN, CEA Saclay - France — The duration of electron bunches created by laser wakefield accelerators (LWFA) can be effectively determined by measuring the coherent transition radiation (CTR) generated at the plasma-vacuum interface. Our research focuses on measuring ultra-short electron bunch durations down to 5 fs (1.5  $\mu$ m) generated from a 25 fs, 70 TW Ti:Sapphire laser focused on a gas jet target with a 7.5  $\mu$ m spot size. To characterize CTR in the infrared region, we will alter the gas jet pressure, position, and size, correlating our results with other diagnostics such as electron spectrometry, interferometry, and x-ray detection.

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