17. Title: Laser-beat-wave photoinjector

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Abstract: This paper details our study of a laser-beat-wave photoinjector that is capable of generating periodically bunched MeV electrons with a bunching factor larger than 0.1 at THz frequencies, for a total amount of 1 nC charges in a 10 ps time duration. Also described is a driver laser technology that can tune the electron bunch frequency with ease, as well as help the growth of high harmonics in the bunching spectrum of accelerated electrons.