Joint DESY and University of Hamburg Accelerator Physics Seminar

Tuesday, May 29-th, 2007

(16:00 in Room 459/30b)

Beam Dynamics of Electron Bunches with Ultra-High Charge Density

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Abstract

Beam calculations are presented for a 1 nC, 4 fs, 130 MeV electron beam, as it is expected from future laser plasma accelerators. Space charge effects are considered with a point to point method for a beam line including focusing. Main aspects are the temporal development of the energy spread and emittance.

These calculations are mandatory for the design study of an envisioned table-top FEL. Principle questions are addressed such as the method of calculation and its limits.

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