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## Particle-in-cell simulation of a Laser-Wakefield based High gradient accelerator

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We present Fourier–Bessel particle-in-cell (FBPIC) simulation results from a laser wakefield electron accelerator driven by Gaussian (G) and Bessel-Gauss (BG) laser beam. The particle-in-cell simulations show that electron bunch energies of tens of MeV can be obtained, within cm distances to obtain a high-quality beam with low energy spread and low slice emittance.

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