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External injection of electrons into a laser-driven plasma wakefield at the CLARA facility

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We report on the injection of 35MeV electron bunches into a laser-driven plasma wakefield at the CLARA linear accelerator, Daresbury Laboratory, UK. In this initial proof-of-principle experiment, we observed the broadening of the energy spectrum of 6ps electron bunches injected into a plasma, demonstrating successful acceleration/deceleration of electrons within the wakefield. We discuss further planned experiments on external injection at the upgraded CLARA/FEBE facility.

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