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Plasma Wakefield Acceleration at VELA/CLARA Facility

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An ultra short, relativistic electron beam with beam energy of 5-250 MeV will be employed to study the key issues in the plasma wakefield acceleration (PWFA) at VELA/CLARA facility at Daresbury laboratory. In this talk, detailed research program on PWFA, e.g. high amplitude wakefield excitation, two-bunch acceleration for VELA/CLARA beam energy doubling, high transformer ratio, long bunch self-modulation and the related beam instabilities will be presented. A 10-20 cm capillary discharge plasma waveguide development will also be discussed.

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