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Hybrid laser-plasma wakefield acceleration BERNHARD HIDDING, THOMAS HEINEMANN, PAUL SCHERKL, DANIEL ULLMANN, ANDREW BEATON, University of Strathclyde — Laser wakefield accelerators (LWFA) can produce electron bunches with characteristics which suggest they are highly suitable to be used as drivers for electron-beam driven plasma wakefield accelerators (PWFA) [1]. The presentation will report on recent experimental results and conceptual advanced which substantiate this idea. It looks as if hybrid LWFA-PWFA systems are highly promising systems to harness specific advantages of PWFA (no dephasing, long acceleration distances, wide potential for ionization injection schemes) realized these in truly compact systems. [1] B. Hidding et al., Monoenergetic energy doubling in a hybrid laser-plasma wakefield accelerator, Physical Review Letters 104, 195002, 2010 [2] S. Kuschel et al., Demonstration of passive plasma lensing of a laser wakefield accelerated electron bunch, Phys. Rev. Accel. Beams 19, 071301 (2016) [3] O. Karger et al., to be submitted

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