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Phase manipulation through plasma density modulation

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A Laser-Wakefield Accelerator can produce electrons in the MeV range just over a few millimetres. However, due to their finite energy spread and divergence the applications of these electrons become limited. By tailoring the plasma density, the phase can be manipulated and hence gaining control of the bunch energy spread and divergence. Here, the properties of 100 MeV shock-assisted ionisation injected electrons after propagation through two supersonic gas jets is presented.

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