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The FLASHForward X-1 Experiment: High brightness beams from a plasma cathode BRIDGET SHEERAN, DESY/University of Hamburg , FLASHFORWARD COLLABORATION — The FLASHForward facility at DESY provides a unique facility for the study of Plasma Wakefield Acceleration (PWFA). At FLASHForward, a several kA electron beam with energies up to 1.25 GeV interacts with a plasma in a dedicated windowless, differentially pumped beamline. The X-1 Experiment aims to demonstrate the injection and acceleration of ultra-high quality electron bunches from within the plasma. This will be achieved by tailoring the plasma profile via laser ionisation with pulses from a 25 TW, fs-class, synchronised laser system prior to interaction with the electron beam. We present the recent progress made towards this internal injection, including results from the latest experimental campaigns.

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