

Abstract Submitted  
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**Electron acceleration with advanced injection methods at the ASTRA laser** KRISTJAN PODER, NELSON CARREIRA-LOPES, JONATHAN WOOD, JASON COLE, BUCKER DANGOR, Imperial College London, PETA FOSTER, Central Laser Facility, RAM GOPAL, Tata Institute of Fundamental Research, CHRISTOS KAMPERIDIS, Imperial College London, OLENA KONONENKO, DESY, STUART MANGLES, Imperial College London, HALIL OLGUN, CHARLOTTE PALMER, DESY, DANIEL SYMES, RAJEEV PAT-TATHIL, Central Laser Facility, ZULFIKAR NAJMUDIN, Tata Institute of Fundamental Research, IMPERIAL COLLEGE LONDON TEAM, CENTRAL LASER FACILITY COLLABORATION, TATA INSITUTE FOR FUNDAMENTAL RESEARCH COLLABORATION, DESY COLLABORATION — Recent electron acceleration results from the ASTRA laser facility are presented. Experiments were performed using both the 40 TW ASTRA and the 350 TW ASTRA-Gemini laser. Fundamental electron beam properties relating to its quality were investigated both experimentally and with PIC simulations. For increased control over such parameters, various injection mechanisms such as self-injection and ionization injection were employed. Particular interest is given to the dynamics of ionization injected electrons in strongly driven wakes.

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