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Characteristics of fast electrons generated in laser-cone interaction for the HiPER project SAMUEL MICHEAU, Centre for Plasma Physics, The Queen's University of Belfast, Belfast, United Kingdom, ARNAUD DEBAYLE, ETSI Aeronauticos, Universidad Politecnica de Madrid, Spain, EMMANUEL D'HUMIERES, CELIA, Universite Bordeaux 1, CNRS, CEA, Talence, France, JAVIER HONRUBIA, ETSI Aeronauticos, Universidad Politecnica de Madrid, Spain, MARCO BORGHESI, MICHAEL GEISSLER, Centre for Plasma Physics, The Queen's University of Belfast, Belfast, United Kingdom — The fast ignition scheme considered for future facilities such as HiPER relies on the efficient generation and propagation of a relativistic electron beam to ignite a pre-compressed fusion pellet. Conical targets have proven to be very attractive to produce high-energy electrons close to the core plasma. However, hybrid PIC simulations have shown that the coupling efficiency between the high-energy electrons and the dense core is highly sensitive to the initial properties of the fast electrons. Here, we present 2D-PIC simulations with the code ILLUMINATION of the laser-cone interaction. We focus on the characteristics of the fast electron beam emitted at the cone tip, such as divergence, temporal evolution, energy and spatial distributions, as a function of the interaction parameters, so as to reach the requirements for fast ignition.

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