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Combined effects of laser and non-thermal electron beams on hydrodynamics and shock formation in the Shock Ignition scheme PH. NICOLAI, J.L. FEUGEAS, M. TOUATI, J. BREIL, B. DUBROCA, T. NGUYEN-BUY, X. RIBEYRE, V. TIKHONCHUK, Celia, Univ. Bordeaux, France, S. GUS'KOV, P.N. Lebedev Inst., Moscow, Russia — An issue to be addressed in Inertial Confinement Fusion (ICF) is the detailed description of the kinetic transport of relativistic or non-thermal electrons generated by laser within the time and space scales of the imploded target hydrodynamics. We have developed at CELIA the model M1 [1], a fast and reduced kinetic model for relativistic electron transport. The latter has been implemented into the 2D radiation hydrodynamic code CHIC [2]. In the framework of the Shock Ignition (SI) scheme, it has been shown in simplified conditions that the energy transferred by the non-thermal electrons from the corona to the compressed shell of an ICF target could be an important mechanism for the creation of ablation pressure [3]. Nevertheless, in realistic configurations, taking the density profile and the electron energy spectrum into account, the target has to be carefully designed to avoid deleterious effects on compression efficiency [4]. In addition, the electron energy deposition may modify the laser-driven shock formation and its propagation through the target. The non-thermal electron effects on the shock propagation will be analyzed in a realistic configuration.

[1] B. Dubroca *et al.*, Eur. Phys. J. D 60, 301 (2010), [2] J. Breil *et al.*, J. Comp. Phys. 224, 785 (2007), [3] S. Gus'kov et al., Phys. Rev. Letters 109, 255004 (2012), [4] Ph. Nicolaï et al, Phys. Rev. E 89, 033107 (2014).

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