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Confrontation simulation/expérience d'accélération de protons par TNSA sur le laser PETAL

jeudi 12 mai 2022 10:00 (20 minutes)

Proton energies as high as 51 MeV have been measured significantly above those expected from preliminary numerical simulations using idealized interaction conditions. Multidimensional hydrodynamic and kinetic simulations, show the importance of the energetic electron production in the extended low-density preplasma created by the laser pedestal. This hot-electron generation occurs through two main pathways : stochastic electron heating ; laser filamentation, leading to local intensifications of the laser field and plasma channeling, both of which tend to boost the electron acceleration.

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Classification de Session: Progrès vers les accélérateurs d'ions