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Low Velocity Ion Stopping for Warm Dense Matter Production
CLAUDE DEUTSCH, LPGP Université Paris XI Orsay — In order to identify the basic interaction mechanisms underlying the production of strongly coupled plasmas with solid density and eV temperature through thin foils heating by intense and heavy ion beams with 0.3<E/A<3 MeV/amu we first confirm with a harmonic oscillator model of bound target electrons that maximum energy transfer occurs around 100 keV/amu beam energy.Plasma stopping is considered by including high velocity stopping on target ions and exact connections between low velocity stopping and particule diffusion. Magnetized targets are also considered. Multiple ion beam scattering on target particles is seen to play an important role in the evaluation of beam penetration depth into target.

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