

Abstract Submitted  
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**Radiation Pressure Dominant Acceleration: Polarization and Radiation Reaction Effects in 3D PIC Simulations**<sup>1</sup> M. TAMBURINI, Pisa University, T.V. LISEYKINA, Rostock University, F. PEGORARO, Pisa University, A. MACCHI, INO - CNR Pisa — Polarization and Radiation Reaction (RR) effects in the interaction of a superintense laser pulse ( $I > 10^{23} \text{W/cm}^2$ ) with a thin plasma foil are investigated with three dimensional Particle-In-Cell (PIC) simulations. For a linearly polarized laser pulse, strong anisotropies such as the formation of two high-energy clumps in the plane perpendicular to the propagation direction and significant radiation reaction effects are observed. On the contrary, neither anisotropies nor significant radiation reaction effects are observed for circularly polarized laser pulses. In both cases, the deformation of the initially flat plasma foil leads to the self-making of a quasi-parabolic shell that focuses the impinging laser pulse to an intensity up to over nine times the initial peak intensity.

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