

Abstract Submitted  
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**Suppression of power losses during EM pulse propagation in underdense plasma slab**<sup>1</sup> KIRILL LEZHININ, KENAN QU, NATHANIEL FISCH, Princeton University — Maximizing the power propagation of intense electromagnetic waves through an underdense uniform plasma slab underlies many important applications, including laser-based particle acceleration, radiation sources, and plasma-based amplifiers. For current state-of-the-art terawatt lasers, significant loss mechanisms in plasma include Forward Raman Scattering and the self-modulational instability. Using 2D PIC simulations with the code EPOCH, we characterize these loss mechanisms and investigate various means to suppress undesirable laser scattering.

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