

Abstract Submitted  
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**Plasma Wave Seed for Raman Amplifiers**<sup>1</sup> KENAN QU, IDO BARTH, NATHANIEL FISCH, Department of Astrophysical Sciences, Princeton University, Princeton, New Jersey 08544, USA — It is proposed to replace traditionally used laser seed in backward Raman amplifiers with initial plasma wave seed. We show, analytically and numerically, that similarly to laser seeds plasma seeds result in Raman amplified pulse in both the linear and nonlinear regimes. The plasma seed is prepared in advance with a certain wavevector and envelope at one edge of the plasma. This methodology is attractive because it avoids issues in preparing and synchronizing frequency shifted laser seed.

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