

Abstract Submitted
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Spectral Dependence of Modulation Instability¹ CAN SUN,
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NJ 08544 — We consider the spectral dependence of modulation instability. In
addition to the usual Maxwell-Boltzmann, or Gaussian, distribution, we consider
Lorentzian, exponential and rectangular power spectra. We show that each distri-
bution gives its own threshold for instability, and that the rectangular spectrum
gives the counterintuitive trend of increasing perturbation period as the profile nar-
rows (becomes more coherent). Theoretical results are confirmed experimentally by
mapping the plasma problem to the equivalent statistical optics system ^{2,3}.

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² D.V. Dylov and J.W. Fleischer, *Phys. Rev. Lett.* **100**, 103903 (2008)

³ D.V. Dylov and J.W. Fleischer, *Phys. Rev. A* **78**, 061804R (2008)

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