

Abstract Submitted
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Emergent Nonlinear Resonance in KEEN Wave Strength at Low Drive¹ T.W. JOHNSTON, Y. TYSHETSKIY, INRS-EMT, B. AFEYAN, Polymath Research Inc. — KEEN-like waves studies [1] in a PIC simulation at low drive agreed with earlier 1-D Vlasov fluid code results [2,3], in that, for a given wavenumber the KEEN waves would, over a wide range of frequencies, give a rather similar response. For at least one frequency in a rather narrow range, keeping the drive going well past the (linearly estimated) trapping period (which usually gives no added benefit), proved to give a significantly larger final amplitude. We discuss our own 1-D Vlasov-fluid study of this nonlinear emergent resonance phenomenon.

1. F. Valentini, T.M. O’Neil, H.E. Dubin, Phys. Plasmas, 13, 052303 (2006)
2. B. Afeyan, K. Won, V. Savchenko, T.W. Johnston, A. Ghizzo, P. Bertrand, 3rd Int. Conf. “Inertial Fusion Sciences and Applications” (IFSA) paper M034, Sept. 7-12, Monterey, CA (2003), p.213, eds. B. Hammel, D. Meyerhofer, J. Meyer-ter-Vehn and H. Azechi, Amer. Nucl. Soc. 2004.
3. B. Afeyan, V. Savchenko, K. Won, T.W. Johnston “New Long-Lived Nonstationary Coherent Structures in Vlasov Plasmas: KEEN Waves”, submitted to Physical Review Letters.

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Tudor Johnston
INRS-EMT

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