

Abstract Submitted  
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**KEEN Waves, Multiple Water-Bag Models and Vlasov-Poisson vs Vlasov-Maxwell Simulations**<sup>1</sup> BEDROS AFEYAN, MATHIEU CHARBONNEAU-LEFORT, Polymath Research Inc., MAGDI SHOUCRI, Institut de recherche d'Hydro-Quebec — KEEN Waves are a manifestation of nonstationary, self-organized, nonlinear, kinetic states prevalent in coherently driven plasmas [1, 2]. We will show reduced models of their evolution in phase space that are reminiscent of multiple water-bag models and capture some of their salient features. In addition, Vlasov-Poisson and Vlasov-Maxwell simulation results will be compared to each other in periodic and non-periodic boundary condition modes. The effect of finite bandwidth (instead of single frequency) drive will be highlighted. [1] B. Afeyan, et al., Kinetic Electrostatic Electron Nonlinear (KEEN) Waves and their interactions driven by the ponderomotive force of crossing laser beams, Proc. IFSA, (Inertial Fusion Sciences and Applications 2003, Monterey, CA), B. Hammel, D. Meyerhofer, J. Meyer-ter-Vehn and H. Azechi, editors, 213, American Nuclear Society, 2004. [2] B. Afeyan, et al., Dynamically Self-Organized Structures in Vlasov Phase Space: Ponderomotively Driven KEEN Waves, Submitted to PRL, 2008.

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