

Abstract Submitted
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Kinetic Simulations of Ladder Climbing and Autoresonance of Plasma Waves¹ EREZ KAMINSKI, Birmingham-Southern College, IDO BARTH, NAT FISCH, ILYA DODIN, Princeton Plasma Physics Lab — Quantum like Ladder Climbing and Autoresonance of classical Langmuir waves in bounded plasmas are numerically studied within a kinetic model and compared with earlier fluid model simulations. Both dynamical solutions are excited and controlled via chirped modulations of the background density that preserve the plasma wave quanta. Landau damping determines the system's maximal stable level, imposing a kinetic limit on the maximal level of the Ladder Climbing or Autoresonance dynamics. Vlasov simulations are employed to test the kinetic stability of both dynamics and to find the kinetic limit for different system's parameters.

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