

Abstract Submitted
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Vlasov simulation of high energy electron tail formation in the presence of Langmuir solitons Y. NISHIMURA, Institute of Space and Plasma Sciences, National Cheng Kung University — By an electrostatic Vlasov simulation,¹ generation mechanism of high energy electron tails in the presence of Langmuir solitons is studied. The resultant electron distribution function resembles that of the Lorentzian type observed in solar wind plasmas. The particle acceleration is discussed as a transport process toward high energy side due to overlapping of multiple resonant islands in the phase space. After the damping of specific Fourier modes (by the wave-particle interaction), and thus shrinkage of the resonant islands, the transport across the islands is prohibited. Role of inhomogeneous background density² which gives rise to acceleration toward the low density side is discussed employing the kinetic model.

¹Y.H.Chen, Y.Nishimura, and C.Z.Cheng, *Terr. Atmos. Ocean. Sci.* **24**, 273 (2013).

²Y.A.Chen, Y.Nishimura, Y.Nishida, and C.Z.Cheng, *Phys. Rev. E* **95**, 033205 (2017).

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