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Vlasov simulation of amplitude-modulated Langmuir waves

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Mechanisms for the generation of Langmuir wave packets are studied by performing a one-dimensional electrostatic Vlasov simulation. The present simulation of a weak-electron-beam instability without ion dynamics suggests two new processes for the amplitude modulation of Langmuir waves. The beam instability excites Langmuir modes over a wide wave number range, but the saturation of the most unstable Langmuir mode