

## How Electron Beams Drives Cyclic Langmuir Collapse and Coherent Radio Emission

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Electron beams accelerated by solar flares and nanoflares are believed to be responsible for several types of solar radio bursts observed in the corona and interplanetary medium, including flare-associated coronal Type U and J and interplanetary Type III radio bursts, and nanoflare-associated weak coronal type III bursts. The characteristic of these radio bursts is their frequency is consistent with the local electron plasma frequency. However, how electron two-stream instability driven by electron beams produces coherent emission with a duration of several orders of magnitude longer than the linear saturation time is a long-standing puzzle. Recently Che, Goldstein, Diamond and Sagdeev proposed that continuous plasma coherent emission is maintained by repetitive Langmuir collapse. The study of coherent radio emission provides a powerful tool to probe the plasma environment of solar corona and the mechanism of acceleration and energetic particle propagation. I will present this mechanism and the new features that can be observed by spacecrafts and ground based telescope.

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