Effect of bounce resonance heating on Electron Energy Distribution Function in a small Inductively Coupled Plasma

It is found that with increasing power, the measured electron energy distribution by Langmuir probe evolves into a Druyvesteyn-like electron energy distribution in the low-pressure regime of 1 mTorr in a small inductively coupled plasma. Electron bounce resonance is introduced to explain the transition of the electron energy distribution against the rf power. The energy diffusion coefficients which determine the shape of the electron energy distribution in elastic range are calculated with and without electron bounce resonance. This electron energy distribution transition is well explained by the electron bounce resonance.