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The electron cyclotron resonance (ECR) at various conditions in the inductively coupled plasma(ICP)

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Recently, we suggested and prove the existence of electron cyclotron resonance (ECR) in a weakly magnetized planar inductively coupled plasma (ICP) in Ref. [ChinWook Chung, \it et. al.}, Phys. Rev. Lett. (2002)). As a continuous study, electron energy distribution functions (EEDFs) in the ICP were measured at various* conditions around the ECR condition. The effect of ECR heating on the EEDF weakens when pressure increases. The higher driving frequency is, the stronger the ECR heating is. In helium gas, the ECR heating of low energy electrons appear not effective while it is distinctly observed in argon. The calculated EEDFs from the kinetic theory at the ECR condition are compared with the experimental EEDFs, which are in good agreement.

[참고문헌]

1. 정진욱, 김성식, 장홍영 “ the electron cyclotron resonance in a radio frequency inductive discharge ”, Phys. Rev. Lett. (accepted, 2002)