Abstract Submitted
for the GEC16 Meeting of
The American Physical Society

Accuracy of cutoff probe for measuring electron density: simulation and experiment DAE-WOONG KIM, SHIN-JAE YOU[1], SI-JUNE KIM, JANG-JAE LEE, Physics, Chungnam national university, JUNG-HYUNG KIM, Vacuum center, Korea research institute of standard and science, WANG-YUHL OH, Mechanical engineering, Korea advanced institute of science and technology — The electron density has been used for characterizing the plasma for basic research as well as industrial application. To measure the exact electron density, various type of microwave probe has been developed and improved. The cutoff probe is a promising technique inferring the electron density from the plasma resonance peak on the transmission spectrum. In this study, we present the accuracy of electron density inferred from cutoff probe. The accuracy was investigated by electromagnetic simulation and experiment. The discrepancy between the electron densities from the cutoff probe and other sophisticated microwave probes were investigated and discussed. We found that the cutoff probe has good accuracy in inferred electron density.

[1]*corresponding author

Dae-Woong Kim
Physics, Chungnam national university

Date submitted: 08 Aug 2016 Electronic form version 1.4