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Experimental Study of the Impedance Characteristics of the Plasma Absorption Probe YOHEI YAMAZAWA, Tokyo Electron Yamanashi Ltd. — The plasma absorption probe (PAP) is a diagnostic which permits the determination of the spatially resolved electron density in a plasma. The simple structure of the probe allows us a robust measurement; however, the mechanism of the absorption is complicated and several papers report that there is still some uncertainty. Basically, the PAP detects the plasma density by determining the absorption peak frequency in the frequency characteristics of the reflection coefficient. We have shown, by an electromagnetic field simulation (GT3-0003, GEC2009) that the frequency characteristics of the PAP impedance reflect the plasma resonance more directly than the frequency characteristics of the reflection coefficient. This time, we will report the experimental observation of the resonance in the frequency characteristics of impedance.

Yohei Yamazawa
Tokyo Electron Yamanashi Ltd.

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