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Impedance Characteristics of the Plasma Absorption Probe YOHEI YAMAZAWA, Tokyo Electron AT LTD. — The plasma absorption probe (PAP) is a diagnostics for determination of spatially resolved electron density.[1] PAP has attracted considerable interest because of its applicability in a reactive plasma. The simple structure of the probe allows us a robust measurement while the mechanism of the absorption is complicated and there are still some uncertainty.[2] In this study, we focus on the frequency characteristics of the impedance instead of the absorption spectrum. An electromagnetic field simulation reveals that there is only one parallel resonance in the impedance characteristics even in a case there are many peaks in absorption spectrum. Thus, the impedance characteristics provide a clue to understanding the mechanism.

[1]H. Kokura, et al., Jpn. J. Appl. Phys. **38** 5262 (1999).
[2]M. Lapke, et al., Appl. Phys. Lett. **90**, 121502 (2007)

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