

Abstract Submitted  
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**High Sensitive Temperature Measurement of Microwave Plasma using Wavelength Modulation Spectroscopy** TOHRU YAMADA, MAKOTO MATSUI, TAITO KAWAKAMI, Shizuoka University — Translational temperature is one of the key parameter to evaluate plasma conditions. In this study, we propose a novel method to determine the temperature using wavelength modulation spectroscopy. The peak value of second harmonic signal was measured as a function of the modulation depth. The translational temperature was estimated by fitting theoretically calculated curve to the characteristic curve. As a result of microwave argon discharge plasma, the estimated temperature shows good agreement with that measured by laser absorption spectroscopy using microwave argon plasma in the pressure range from 9.3 Pa to 446 Pa.

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