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**Plasma diagnosis using the laser-plasma terahertz(THz) radiation**

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— There has been growing interest in laser-plasma terahertz(THz) radiation as a source for plasma diagnostics for its strong radiation energy and broadband characteristics. Yet, it has not been used in actual diagnostics systems as its validity was not thoroughly investigated. In this work, we measured the plasma density in our inductively-coupled plasma(ICP) chamber with the laser-plasma THz radiation. The THz time-domain spectroscopy(THz-TDS) and single-shot detection method were used for the detection of the THz. The diagnosis results from the two different detection methods were consistent with each other, giving a possibility of the realization of the laser-plasma-THz-based plasma diagnostics.

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