

Abstract Submitted
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A Convenient Method of Calibrating Relative Sensitivity of Multi-Channel Thomson Scattering Diagnostic System KAZUMICHI NARIHARA, National Institute for Fusion Science, ICHIHIRO YAMADA, HIROSHI HAYASHI, LHD EXPERIMENTAL TEAM — LHD is equipped with a 200-channel Thomson scattering diagnostic, which can yield electron temperature ***Te*** and density ***ne*** profiles along the major radius passing the magnetic axis. Though the ***Te*** profiles are of fairly good quality, the ***ne*** profiles are far from satisfactory due to incomplete sensitivity calibration of each polychromator. In order to elaborate this issue more efficiently, we are developing a versatile method of calibration: To simulate light coming from the scattering volumes in a plasma and passing the view window, we used light diffusively reflected from a BaSO₄-coated plate set on the surface of the viewing window in the airside, which is illuminated by 10 ns pulse light from an OPO with wavelength scanned between 600-1060 nm. Combining the scattering length and the solid angle for each spatial-channel with the polychromator-sensitivity thus obtained, we can obtain the coefficients necessary for deducing ***ne*** profile. We will examine the ***ne*** profiles at the position where the structures are observed on ***Te*** profiles.

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