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Experimental Study of Diffracted Beam Patterns of Microwave Imaging Reflectometry[1] I. HONG, M. KIM, Y. NAM, G.S. YUN, J.B. KIM, W. LEE, H.K. PARK, POSTECH — Verification of diffracted beam pattern of the Microwave Imaging Reflectometry (MIR) is important for reconstructing the density fluctuation at the cut-off layer in the plasma. The diffraction patterns of the expanded Gaussian probe beam, reflected from a corrugated metallic target with a matching curvature, is compared with those of the Gaussian beam used in conventional reflectometry from the same target. The measured diffracted beam patterns are compared with the two simulation methods (FDTD method and analytic method based on the phase screen model). Finally, characteristic of the images of the corrugated target surface at the imaging plane is studied for various target conditions.

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