

Abstract Submitted for the Forty-Seventh Annual
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Category Number and Subject: 5.6.2 DIII-D tokamak

Theory Experiment

Dust Measurements with the DIII-D Thomson System,*
B.D. Bray, W.P. West, *GA*, J. Burkart, *UC Davis* – The DIII-D Thomson scattering system, consisting of eight ND:YAG lasers and 44 polychromator detection boxes, has recently been used to observe the existence of dust in the scrape-off layer and divertor regions during normal plasma operations. In order to maintain absolute sensitivity calibrations of the Thomson system, each polychromator box contains a detector channel with a filter at the laser wavelength that is sensitive to Rayleigh/Mie scattered light. Dust particles residing in the region of the laser beam viewed by a detector produce a very large scattered light signal in this Rayleigh channel compared to the usual Thomson scattering from the plasma electrons. Background from stray light scattered in the machine and neutrons can be estimated and average density profiles for various plasma configurations are determined.

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