

**Abstract Submitted for the Forty-Sixth Annual Meeting  
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Category Number and Subject: 5.7.0. Diagnostics

Theory     Experiment

**A Bichromator for High Time Resolution Measurements of Stark Broadened Pellet Ablation Light,\*** G.L. Schmidt, L.R. Baylor, T.C. Jernigan, D.T. Fehling, *Oak Ridge National Laboratory*, N.H. Brooks, *General Atomics* – The details of the pellet/plasma interaction are important for modeling of local pellet source rates and cross field transport of pellet mass. Understanding these processes is critical to the projection of current fueling experiments to future devices such as ITER. Measurement of the Stark broadened deuterium emission lines provides the electron density and temperature of the pellet cloud for comparison with modeling details. Recent Stark broadening measurements on JET for low field launch pellets at moderate time resolution indicate a slow variation in the cloud parameters occurs. Observations of ablation light suggest changes in cloud parameters may occur on faster time scales. In this paper we report on the possible application of a multiple interference filter technique [1] to allow monitoring of cloud parameters at time resolution sufficient to study both the slow and rapid variations in cloud parameters. Application of the bichromator to line widths and temporal evolution typical of DIII-D pellet injection cases will be discussed.

[1] McNeill, D.H., *Rev. Sci. Instr.* **73** (2002) 3193.

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