

Abstract Submitted  
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**Effect of secondary beam neutrals on MSE: Experiment<sup>1</sup>** JINSEOK KO, Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, USA, STEVE SCOTT, Princeton Plasma Physics Laboratory, Princeton, NJ, USA, BILL ROWAN, Fusion Research Center, University of Texas, Austin, TX, USA, BOB GRANETZ, IAN HUTCHINSON, Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, USA, HOWARD YUH, Nova Photonics, Inc., NJ, USA — It has been conjectured that the anomalous results obtained previously during beam-into-gas calibrations of the Motional Stark Effect (MSE) diagnostic on Alcator C-Mod are caused by the ‘secondary’ beam neutrals - the neutrals that ionize following collisions with the torus gas and then re-charge exchange at a random gyro angle. Based on this conjecture, the C- Mod diagnostic neutral beam (DNB) was pivoted toroidally to impart a non-zero parallel beam velocity. In this new configuration, spectroscopic measurements and beam-into-gas calibrations confirm that the beam-into-gas anomaly is caused by the secondary beam neutrals. In addition, we report initial results from the beam-into-plasma calibration using plasma edge sweeping and plasma current ramping.

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