

Abstract Submitted
for the DPP01 Meeting of
The American Physical Society

Sorting Category: 5.6.2 (Experimental/Observational)

Initial Results from the LIBEAM Diagnostic¹ D.M. THOMAS, A.S. BOZEK, J.I. ROBINSON, T.N. CARLSTROM, A.W. LEONARD, K.H. BURRELL, J. KULCHAR, J. LYNCH, D. HOYT, T.E. HARRIS, S.G.E. PRONKO, S.W. DELAWARE, D.H. KELLMAN, General Atomics, J. BREWIS, Allied Optics, D.K. FINKENTHAL, Palomar Scientific Instruments — Precision polarimetry of an injected lithium beam offers one method of determining details of the edge magnetic field structure in tokamaks. During the 2001 run period we succeeded in reinstalling the LIBEAM neutral lithium beam (30 keV, ~10 mA) on DIII-D, along with an upgraded power supply and control system. In-vessel polarization-maintaining optics, photoelastic modulators, and a 32-channel radial fiber array were installed and spatially calibrated. A digital lock-in technique was developed to analyze the beam fluorescence polarization state, using commercially available PCI-based digitizer boards. A prototype detection system based on GaAs PMTs, interference filters, and 0.03 nm passband etalons was assembled for observing various parts of the line profile. Initial observations of beam fluorescence were made on numerous DIII-D shots. After etalon tuning, changes in the circular polarization were observed, consistent with poloidal field growth during current ramps.

¹Work supported by US DOE under Contract DE-AC03-99ER54463.

Prefer Oral Session
 Prefer Poster Session

D.M. Thomas
thomas@fusion.gat.com
General Atomics

Special instructions: Poster 30, Stability, MHD, Current Drive, Advanced Tokamak

Date submitted: July 19, 2001

Electronic form version 1.4