

Abstract Submitted  
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**Proposed profile measurements of internal B, ne and Te on the Magnetized Target Fusion (MTF) plasmas using Pulsed Polarimetry** R.J. SMITH, University of Washington, G.A. WURDEN, LANL — The novel pulsed polarimetry technique combines both the Faraday effect and Thomson scattering into a comprehensive Lidar-like diagnostic that measures the sightline parameters, B(s), ne(s) and Te(s) remotely and non-perturbatively. The target FRC: FRX-L at LANL (development of formation and translation hardware and scenario for MTF) and FRCHX at AFRL, Kirtland AFB (formation + translation + liner implosion) have sufficiently large optical activity to allow polarimetric measurements in the near infrared. The proposed diagnostic is based on an ultra-short pulsed NdYag laser with streak camera detection. Magnetic field spatial resolutions of several *cms* are possible on FRX-L and sub-cm on FRCHX. The pulsed polarimeter system and the relevance of the internal measurements to the MTF program will be described.

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