

Abstract Submitted
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Monostatic density profile reflectometry measurements on DIII-D and relevance to ITER low-field-side reflectometer¹ W.A. PEEBLES, C. WANNBERG, X. NGUYEN, N.A. CROCKER, L. ZENG, T.L. RHODES, E.J. DOYLE, UCLA, G. HANSON, T. BIGELOW, J. WILGEN, ORNL — Typically, density profile reflectometry systems employ bi-static antenna configurations to avoid the deleterious effects caused by spurious reflections. However, there are potential advantages, particularly on ITER, if a monostatic antenna configuration could be employed. Such a configuration would allow either a reduction in the number of waveguides necessary to satisfy measurement requirements or an expansion in capability assuming a fixed number of antennas. To address the feasibility of this configuration, a monostatic reflectometer operating from 33 to 75 GHz in both O-and X-mode has been designed, fabricated, installed and tested on DIII-D. Preliminary results appear positive with measured profiles in good agreement with Thomson scattering. More extensive tests are underway, including investigation of the ability to accommodate plasma height variations using a fixed antenna. System design and preliminary results will be presented.

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