

Abstract Submitted  
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**Tomographic Reconstruction of Two-Dimensional Plasma Structure in the FRX-L Device** ADAM LIGHT, IVO FURNO, GLEN WURDEN, MATTHEW LEONARD, CAMERON BASS, THOMAS INTRATOR, P-24 Plasma Physics, Los Alamos National Laboratory — An optical tomographic system has been developed to analyze plasma structure in the Field Reversed eXperiment – Liner (FRX-L) device at Los Alamos National Laboratory. FRX-L is designed to produce a high-density field-reversed configuration plasma (FRC) for fusion energy research. Visible light emitted by the plasma provides much information about its internal structure and is measured by several diagnostics, including the tomographic system described in this work. The diagnostic system consists of two optical array holders each equipped with eight 600- $\mu\text{m}$  optical fibers arranged in a fan-like geometry. Line-integrated optical brightness data from the fan arrays are converted to a two-dimensional emissivity map by tomographic inversion. Calibration techniques for the system are described, together with tomographic principles and inversion methods. Inversion routines and preliminary results are presented.

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