

Abstract Submitted
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SXR tomographic imaging in MST P. FRANZ, F. BONOMO, M. GOBBIN, L. MARRELLI, P. MARTIN, P. PIOVESAN, G. SPIZZO, Consorzio RFX - Associazione Euratom-ENEA Padova, Italy, B.E. CHAPMAN, D. CRAIG, J.A. GOETZ, S.C. PRAGER, J.S. SARFF, Dept. of Physics, University of Wisconsin-Madison — We present SXR tomographic images of multiple magnetic islands in the core of the MST RFP plasma. The tomographic diagnostic is comprised of four multi-channel cameras viewing the plasma at different poloidal angles. The islands appear as a result of pulsed parallel current drive (PPCD). With the application of PPCD, all tearing mode amplitudes can be reduced, and the overlap of the associated islands decreases to such an extent that magnetic flux surfaces are at least partly restored, and multiple, discrete islands can form. In some PPCD plasmas, however, the mode resonant nearest the magnetic axis remains relatively large, resulting in a single island in the plasma core. The presence of multiple or single helical islands indicated by tomographic imaging is confirmed with numerical modeling. The correlation of these structures with transport and magnetic self-organization will be presented. In addition, preliminary measurements with multicolor SXR tomography (where the four cameras are used with filters of different thickness) will be shown. Work supported by U.S.D.O.E.

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