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Two-Color SXR Tomography on MST M.B. MCGARRY, J.A. GOETZ, D.J. DEN HARTOG, University of Wisconsin - Madison, P. FRANZ, Consorzio RFX - Padova, Italy — Recent improvements in the analysis technique used to calculate plasma electron temperature using a soft-x-ray (SXR) tomography diagnostic on MST are presented. The diagnostic is comprised of four 20-channel cameras at the same toroidal angle but different poloidal angles. The two-color configuration uses two pairs of Be filters in the four cameras, giving measurements of two distinct energy ranges dominated by bremsstrahlung radiation. The ratio of emissivity in these two energy ranges gives a poloidal map of electron temperature. Improvements to the original inversion technique have reduced numerical oscillations. The model used to simulate SXR emission from the plasma has also been improved to incorporate measured density and temperature profiles. The model can also simulate line and recombination radiation. Furthermore, the model includes a radially dependent enhancement factor that can be used to assess other sources of radiation, as well as possible radial variations in Z_{eff} . Persistent artifacts in the temperature calculation are being investigated, and the improved technique will be applied to recent experimental results. Work supported by U.S.D.O.E.

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