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Hard x-ray tomography system on MST[1] ABDULGADER ALMAGRI, DANIEL CLAYTON, ROBERT O'CONNELL, Department of Physics, University of Wisconsin-Madison. Madison, WI 53706 — A CdZnTe 16 channel hard x-ray camera, with excellent sensitivity to photons in the energy range 10-200 keV, has been tested on MST. These detectors are immune from vibration noise and are unaffected by electromagnetic noise from rf sources. Absolute calibration of these detectors is made using the 59 keV line from Am241 source. Hard x-ray generated during 60 kW of launched LH wave into MST plasma is measured and shows an increase in the hard x-ray intensity in the range of 10-50 kev. Three of these detectors will be configured to form a hard x-ray tomography system. Such a system will be capable of resolving x-ray intensity in space, time and energy. The measured hard x-ray energy spectrum is used as an input to the CQL3D code to calculate D(r), the energetic particle diffusion. This tomographic system will be placed near the LH and EBW antennas to look for signatures of energetic electrons generation and their radial diffusion. Hard x-ray contours at multiple energy ranges, and comparison with soft x-ray as well as magnetic surfaces will be presented.

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