Improvement of bolometer diagnostic system on EAST

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Bolometer diagnostics have been developed on EAST to measure the total radiated power and the radiated power density distribution. Two different types of detectors are chose including metal foil resistive bolometers and AXUV (Absolute X-ray Ultraviolet) photodiodes [1].During the recent EAST lower divertor upgrade, the layout of the bolometer viewing chords and the system function are improved for the future long pulse operation. Two AXUV divertor cameras are newly designed and are installed below dome plate in order to measure the radiation in the outer and inner divertor regions separately. Another different toroildal AXUV camera is installed to study the radiation asymmetry during large impurity injection discharges such as in disruption mitigations. The electronic amplifier system is replaced with higher bandwidth. The in-vessel support and shielding structure are modified for strong RF anti-interference. Some technique details and testing results will be given. In addition, the Gaussian process tomography method based on Bayesian probability theory have been applied on AXUV data processing [2,3]. Some typical results will be shown.

References

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