

First Results from Resistive Bolometers in KSTAR

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Bolometer diagnostics are being developed for the KSTAR experiment as part the Japan-Korea cooperation program in magnetic fusion research, as a collaboration between the National Institute for Fusion Science and the National Fusion Research Center (Rep. of Korea). The development of both resistive bolometer arrays and InfraRed imaging Video Bolometers (IRVB) for the KSTAR experiment are included in this collaboration.

A twelve channel resistive bolometer array was installed in KSTAR in the summer of 2009 in preparation for KSTAR's second experimental campaign starting in October of 2009. Initial data from the resistive bolometers is shown in Figure 1. A drawing of the sightlines of the resistive bolometers is shown in Figure 2. The sightlines view the plasma tangentially and fan out in the major radial direction along the horizontal mid-plane of the torus. In addition to Ohmic heating, ECH is a major source of input power on KSTAR as can be seen in Figure 1. However the ECH induces large amounts of noise in the bolometer signals as can be seen in Figure 1. We plan to reduce this noise by using electroformed grids on the bolometer camera aperture as a microwave filter in the next campaign.

Acknowledgement

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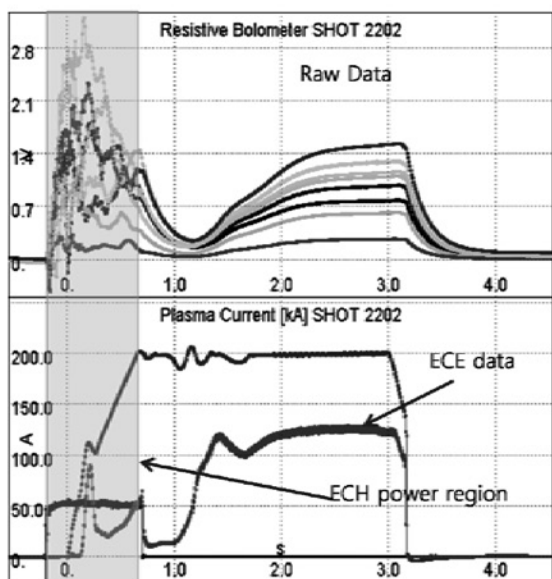


Fig.1 Bolometer signals and plasma discharge data for shot 2202 in KSTAR.

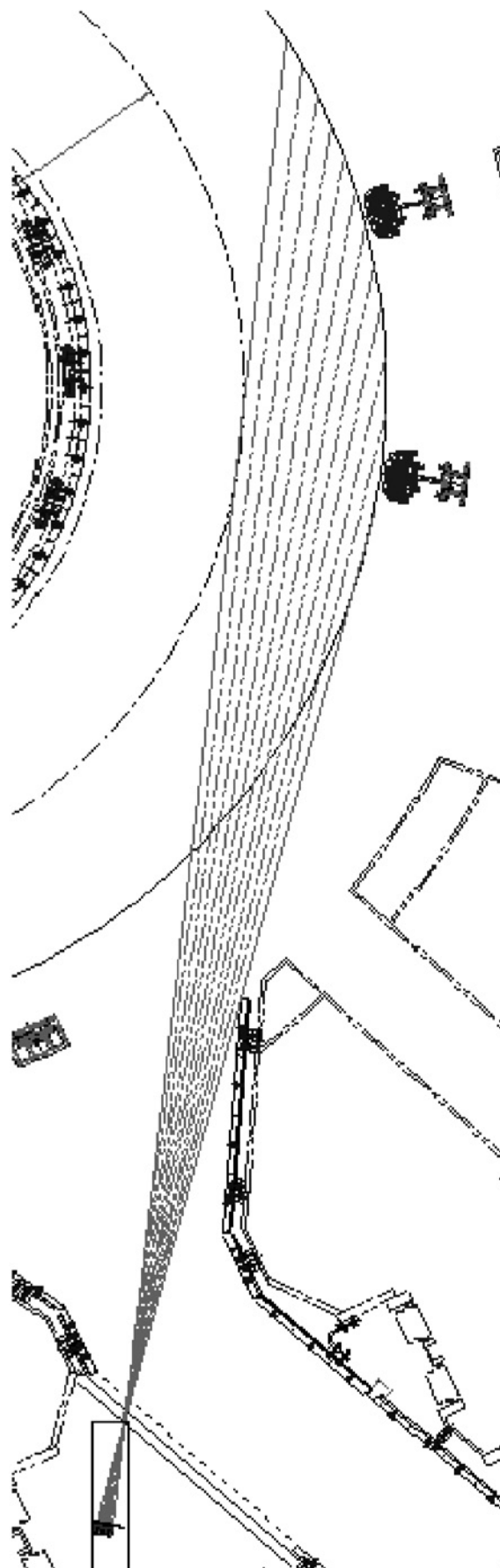


Fig.2 Tangential field of view of resistive bolometers in KSTAR.