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6.24 Conceptual design for resistive bolometer system with multi-apertures for total radiation power measurement in JT-60SA

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In the previous study, design techniques with multiple apertures for a field of view (FoV) of the resistive bolometer system were developed [1] to reduce required number of bolometer channels for the determination of the total radiation power. In the present study, FoVs of the resistive bolometer system have been designed with previously developed techniques for JT-60SA. The FoV design is carried out with following setting requirements; (i) requirement of independent determination of the divertor and the main plasma radiation and (ii) limitation of a use of only allocated three diagnostic ports. The present design technique indicated that the main plasma can be covered with only two channels. The wide coverage by two channels is favorable for the replication of the bolometer system for improving reliability against the failure of a bolometer during experiment. It has been also confirmed that a radiation phantom placed at either of the main plasma region and the divertor region can be determined within 3 % and 15 % deviation, respectively, from the preset emissivity. In the conference, S/N ratio of the bolometer signal and estimated heat input on the bolometer with a simulated radiation profile will also be discussed. [1] R. Sano et.al., (to be submitted)

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