

Abstract Submitted
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Large Area Black Body Source for ITER ECE In Situ Calibration¹ P.E. PHILLIPS, Fusion Research Center, Univ. of Texas, H-P. LIU, Center for Electomechanics, Univ. of Texas, M.E. AUSTIN, Fusion Research Center, Univ. of Texas, J. BENO, Center for Electomechanics, Univ. of Texas, R.F. ELLIS, Institute for Research in Electronics and Applied Physics, Univ. of Maryland, A. OUROUA, Center for Electomechanics, Univ. of Texas, W.L. ROWAN, Fusion Research Center, Univ. of Texas — Here we report on the development of a prototype hot calibration source for the ITER ECE system. The source is intended to meet the requirements described in DDD55 Overview of Diagnostics. The requirement is for two *200 mm* diameter sources, one operating at atmospheric pressure and the other operating in vacuum near the plasma. Both will operate at temperatures up to *800 °C* and have an emissivity > 0.7 for frequencies greater than *120 GHz*. A realistic thermal model of a SiC hot calibration source with a surface of pyramids has been constructed. The model results will be compared with data from a prototype SiC source. The microwave emissivity of a full size (*200 mm* OD) source was measured in the range *100-500 GHz* with a calibrated Michelson radiometer. Heating methods under consideration will be discussed..

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