

Abstract Submitted
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Wideband ECE Imaging Upgrade for TEXTOR¹ C.W. DOMIER, P. ZHANG, Z.G. XIA, N.C. LUHMANN, JR., University of California at Davis, H. PARK, E. MAZZUCATO, Princeton Plasma Physics Laboratory, M.J. VAN DE POL, I.G.J. CLASSEN, R. JASPERS, A.J.H. DONNE, FOM-Institute for Plasma Physics Rijnhuizen — A 128 channel 2-D Electron Cyclotron Emission (ECE) Imaging instrument has been routinely used to study MHD physics such as $m=1$ and $m=2$ modes on the TEXTOR tokamak. As presently configured, each array element of the 16 element mixer array measures plasma emission at 8 simultaneous frequencies over a 4 GHz span to form a 16×8 image of electron temperature profiles and fluctuations over an area of 16 cm (vertical) by 6 cm (horizontal). This instrument will be upgraded in October 2006 with new wideband ECE electronics which increase the instantaneous frequency coverage by $>50\%$ to 6.4 GHz with a corresponding increase in horizontal plasma coverage. Arranged in a new modular fashion, the system is easily extended to form a 16×16 system spanning 12.8 GHz by employing two modules per array channel, or as high as 16×24 spanning 19.2 GHz by employing three modules per array channel.

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