Abstract Submitted
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Microwave Imaging Reflectometry on NSTX[1] Z.G. XIA, C.W. DOMIER, Y. LIANG, N.C. LUHMANN, JR., J. WANG, L. YANG, UC Davis, E. MAZZUCATO, H. PARK, PPPL — A 3-D Microwave Imaging Reflectometry (MIR) instrument is proposed for NSTX. Reflections from multiple, extended plasma cutoff surfaces are imaged onto a 2-D mixer array (8x2 or 8x4 elements, depending upon the size of the viewing window). Through the simultaneous launch and collection of up to 16 probe frequencies covering a frequency span of 40-70 GHz, the result is a 3-D visualization (up to 8x4x16 or 512 channels) of plasma density fluctuations including IRE (sawtooth), EPMs and "fishbones," CAE/GAE and TAE/rTAE modes. The resultant 3-D images of turbulence will address the details of ITG, zonal flows and streamers. Technical details regarding the MIR system design, including a number of implementation options (funding dependent), will be presented.

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