

Abstract Submitted
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High-k scattering of low frequency MHD activities in NSTX K.L. WONG, E. MAZZUCATO, Princeton Plasma Physics Laboratory, D.R. SMITH, The University of Wisconsin, K. TRITZ, The Johns Hopkins University, S. KAYE, Princeton Plasma Physics Laboratory — Low frequency MHD modes in tokamaks usually have long wavelengths outside the detection range of high-k scattering diagnostics. However, data from the NSTX high-k scattering system exhibit many narrow low frequency (10-100 kHz) peaks associated with various low frequency MHD activities, from fishbones to Alfvén eigenmodes. These MHD modes are basically shear Alfvén waves, they can convert into short wavelength kinetic Alfvén waves near Alfvén resonance and thus become detectable by high-k scattering. Such observation was first reported in TFTR.¹ Since the NSTX scattering system mainly detects the radial component of \mathbf{k} , it can see more detailed features of these mode-converted kinetic Alfvén waves. Corroborating data from soft X-ray camera, Mirnov coils and detailed analysis of these data will be presented.

¹K.L. Wong et al., Phys. Lett. A **224** (1996) 99.

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