

Abstract Submitted
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Investigation of microtearing mode effects on electron transport in NSTX¹ KING-LAP WONG, RONALD BELL, STANLEY KAYE, BEN LEBLANC, DAVID MIKKELSEN, Princeton Plasma Physics Laboratory — While ETG turbulence is a popular candidate for the explanation of anomalous electron transport in tokamaks, microtearing modes may be particularly important in spherical tokamaks due to their low magnetic field. These modes can be the fastest growing modes at low $k_{\theta}\rho_s$ in NSTX² and MAST.³ Microtearing modes have odd parity electrostatic eigenfunctions, are extended along field lines and they propagate in the electron diamagnetic drift direction. Such analysis will be extended to recent NSTX data. Estimates of their effects on electron transport based on existing nonlinear theory will be presented and compared with experimental results.

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²M.H. Redi et al, Proc. 30th Conf. Control. Fusion Plasma Phys. Pp.494 (2003).

³D.J. Applegate et al., Phys. Plasmas **11**, 5085 (2004).

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