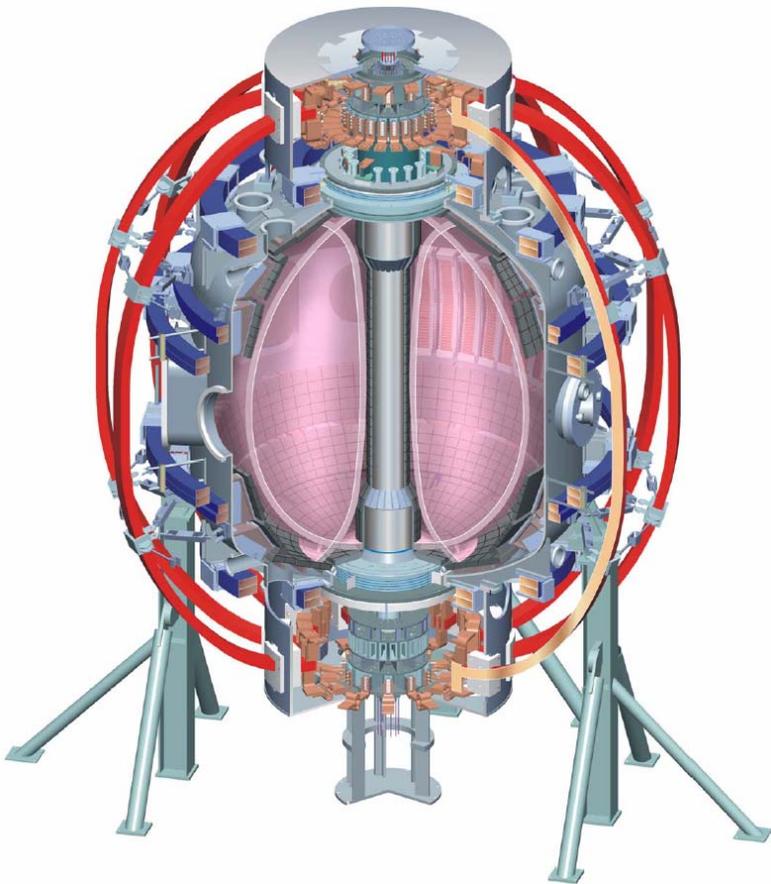


XP714 – B_T dependence of high- k fluctuations



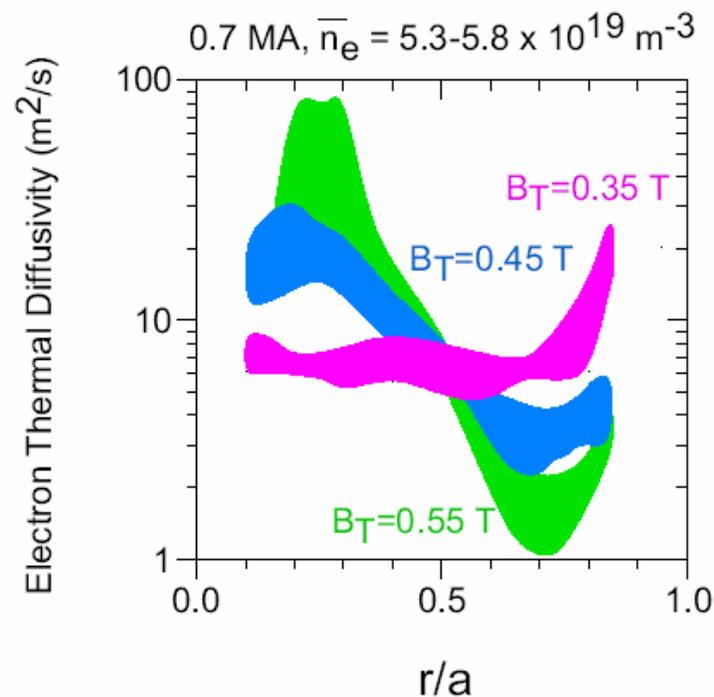
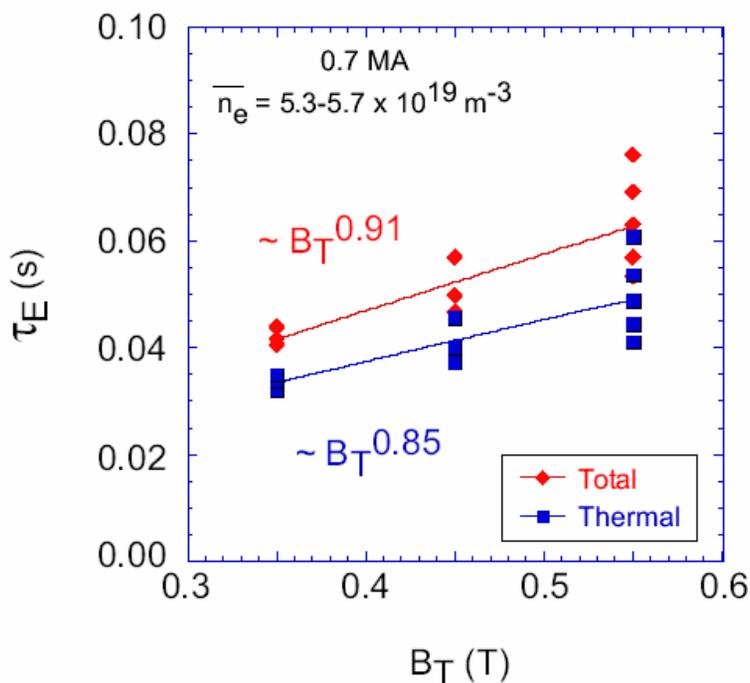
D. R. Smith, S. Kaye, W. Lee,
E. Mazzucato and H. K. Park
PPPL

NSTX Physics Meeting
June 18, 2007

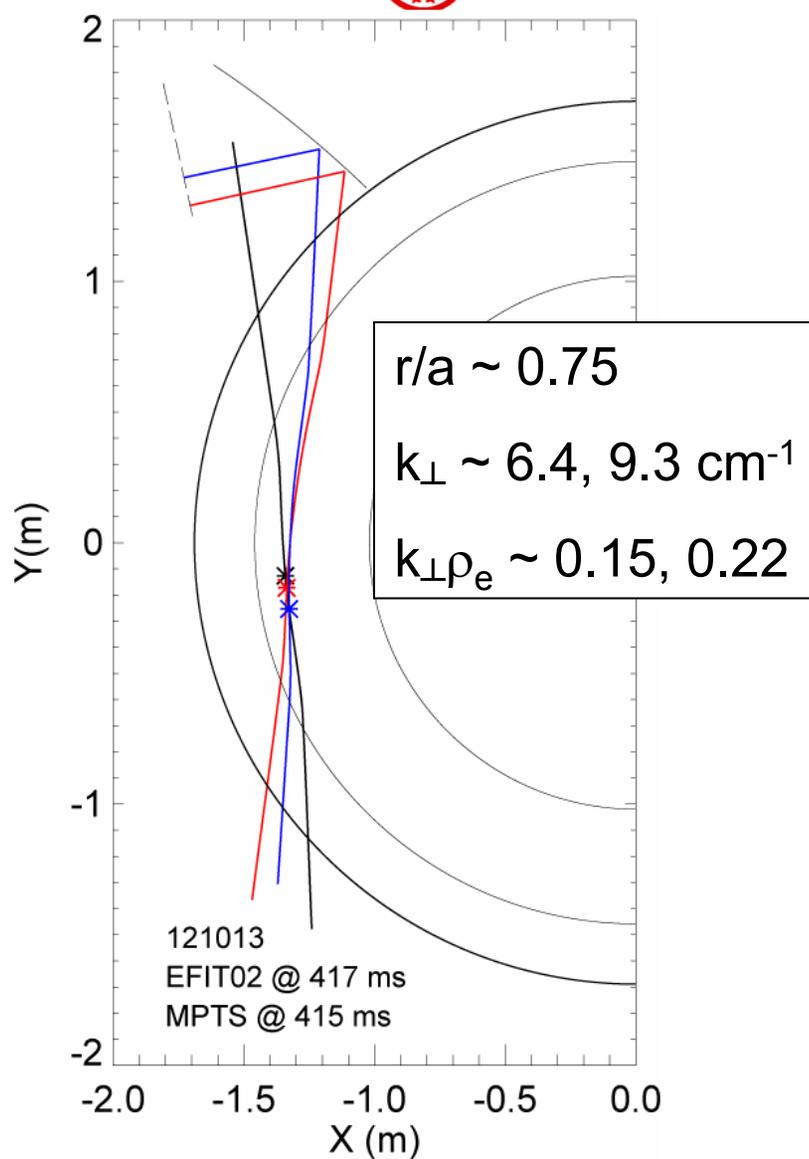
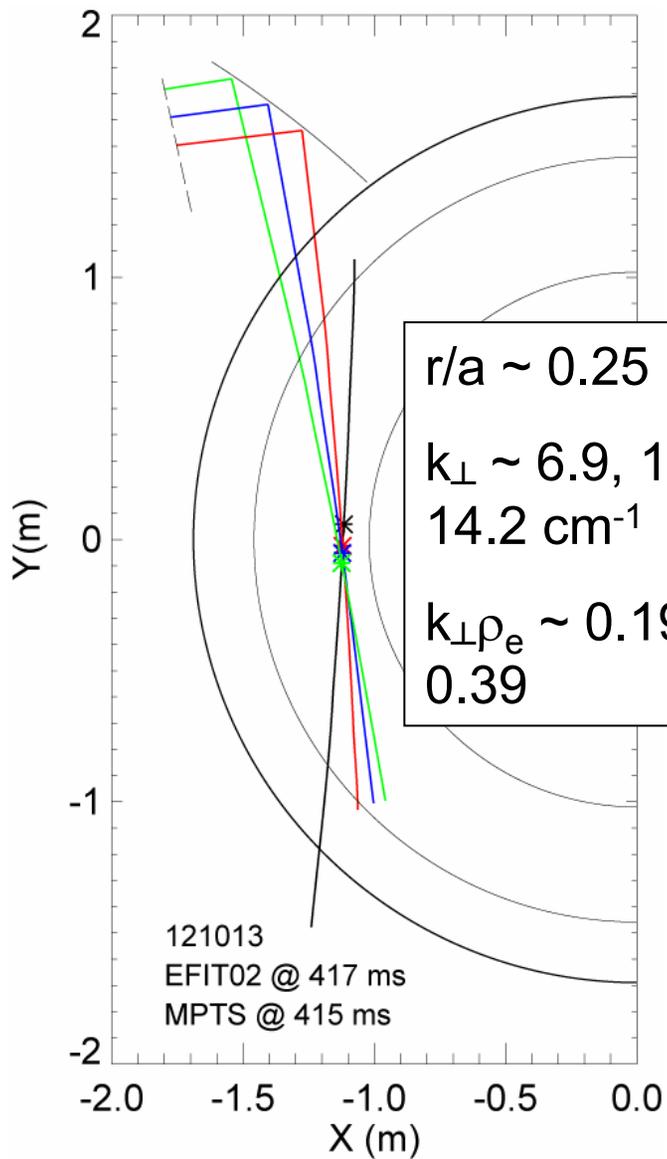
XP714 Objective



- XP532 (Kaye): Confinement improved at higher B_T due to improved electron transport
- XP714: Repeat B_T scan of XP532 and measure high-k fluctuations at multiple radii



Pre-Experiment Ray Tracing Analysis



Shot Matrix



All shots: 1248xx

	$r/a \sim 0.25$	$r/a \sim 0.75$
$B_T = 3.5 \text{ kG}$	82, 83	92
$B_T = 4.5 \text{ kG}$	87	88
$B_T = 5.5 \text{ kG}$	85, 86	89, 91

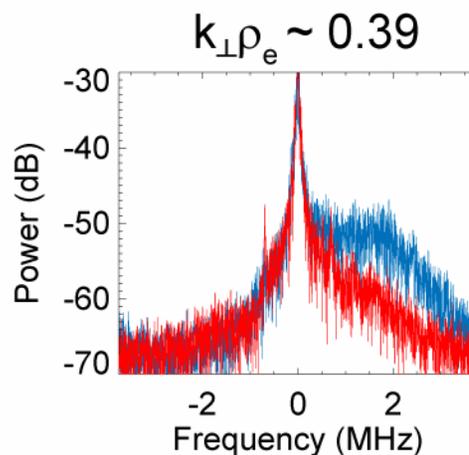
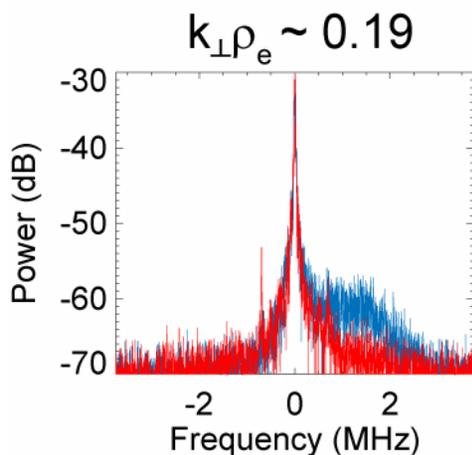
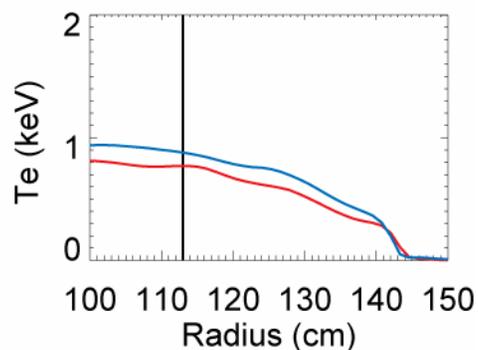
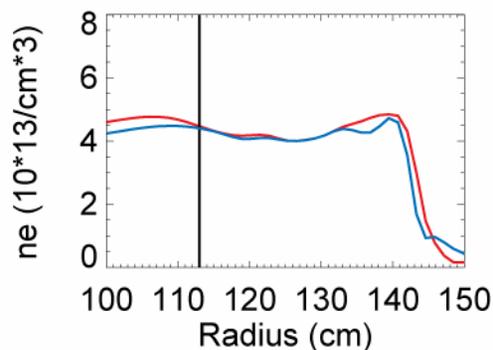
Inboard Measurements



$r/a = 0.26$ & $R = 113$ cm

124882 - 3.5 kG - 365 ms

124885 - 5.5 kG - 432 ms



Asymmetric spectral feature increases at higher field.

This is consistent with results from XP534.

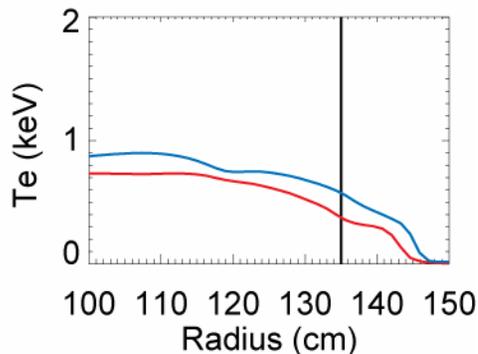
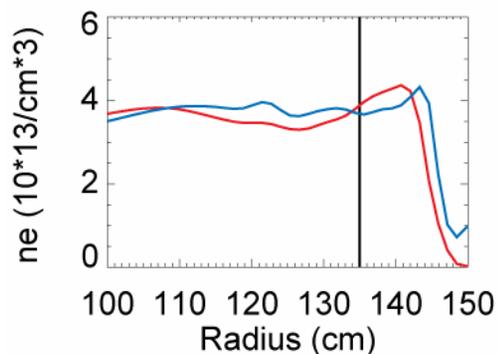
Outboard Measurements



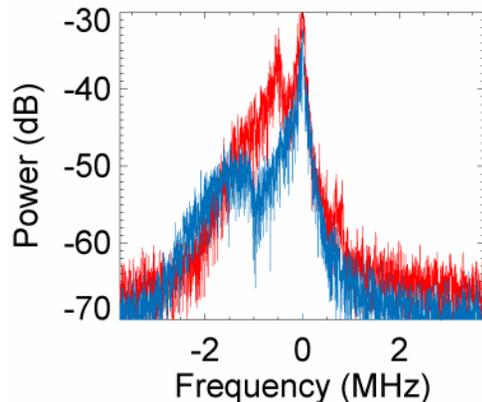
$r/a = 0.76$ & $R = 135$ cm

124892 - 3.5 kG - 348 ms

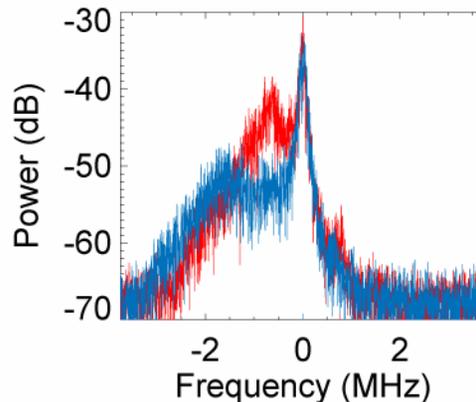
124891 - 5.5 kG - 415 ms



$k_{\perp}\rho_e \sim 0.16$



$k_{\perp}\rho_e \sim 0.24$



Asymmetric spectral feature decreases at higher field.

This is consistent with results from XP534.