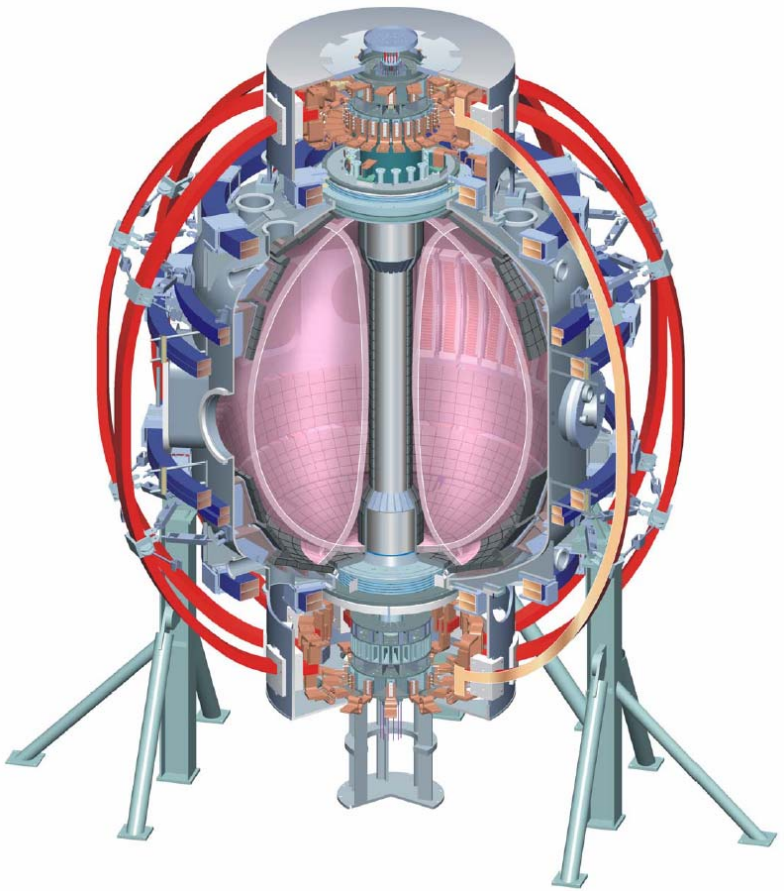
XP714 – B_T dependence of high-k fluctuations

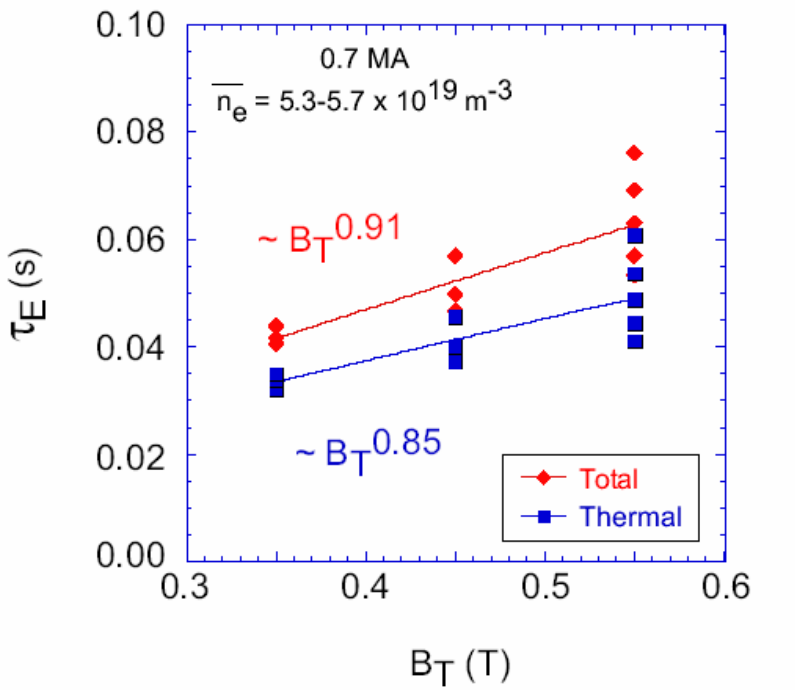


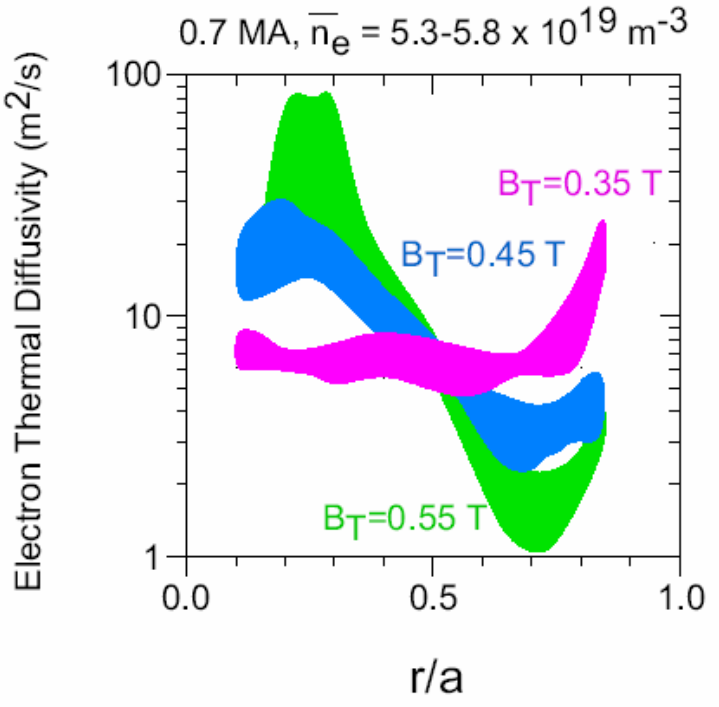
D. R. Smith, S. Kaye, W. Lee,
E. Mazzucato and H. K. Park
PPPL

NSTX Physics Meeting
April 9, 2007

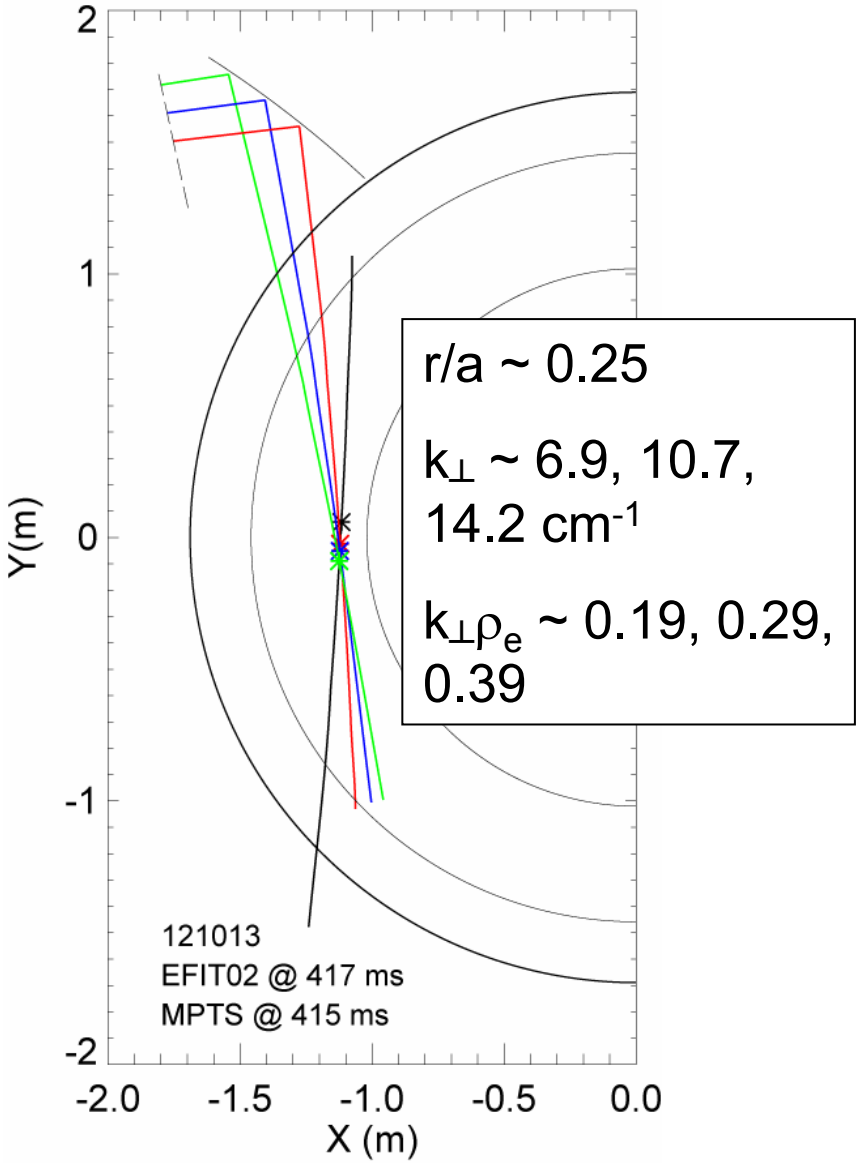
XP714 Objective

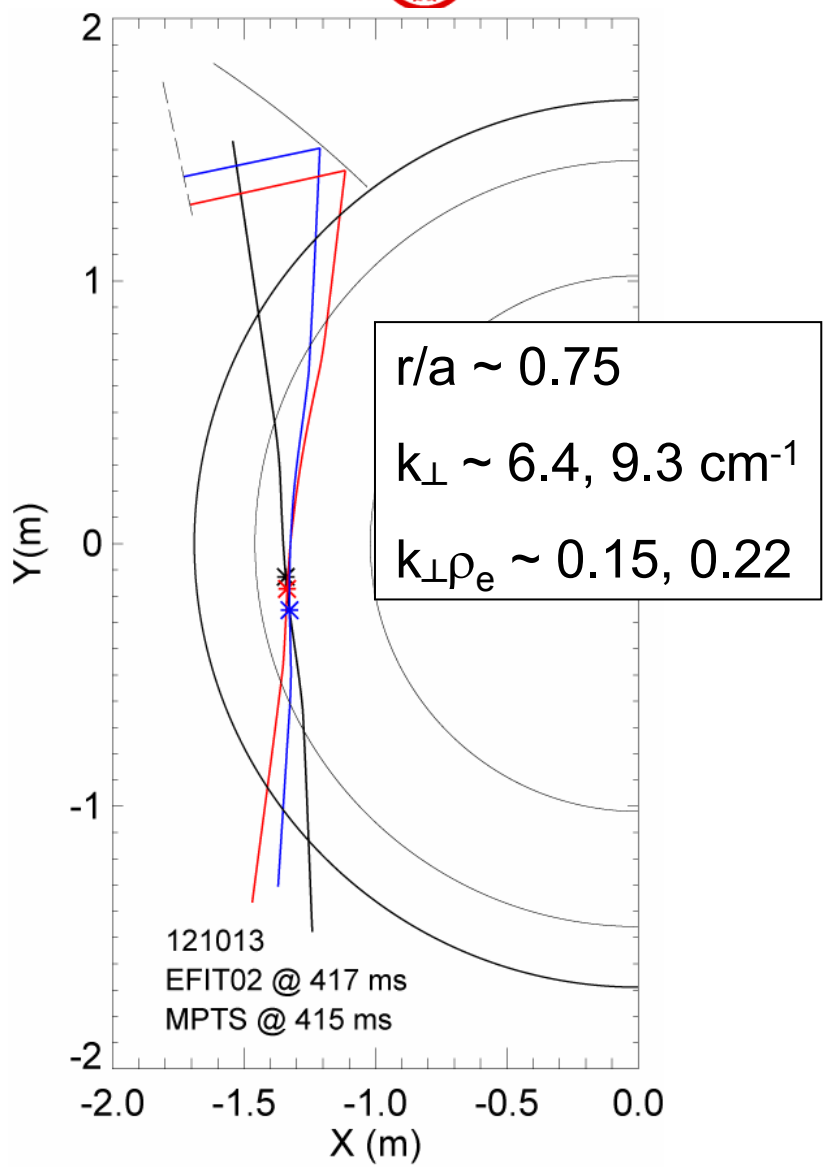
- XP532 (Kaye): Confinement improved at higher B_T due to improved electron transport
- XP714: Repeat B_T scan of XP532 and measure high-k fluctuations at multiple radii





Pre-Experiment Ray Tracing Analysis





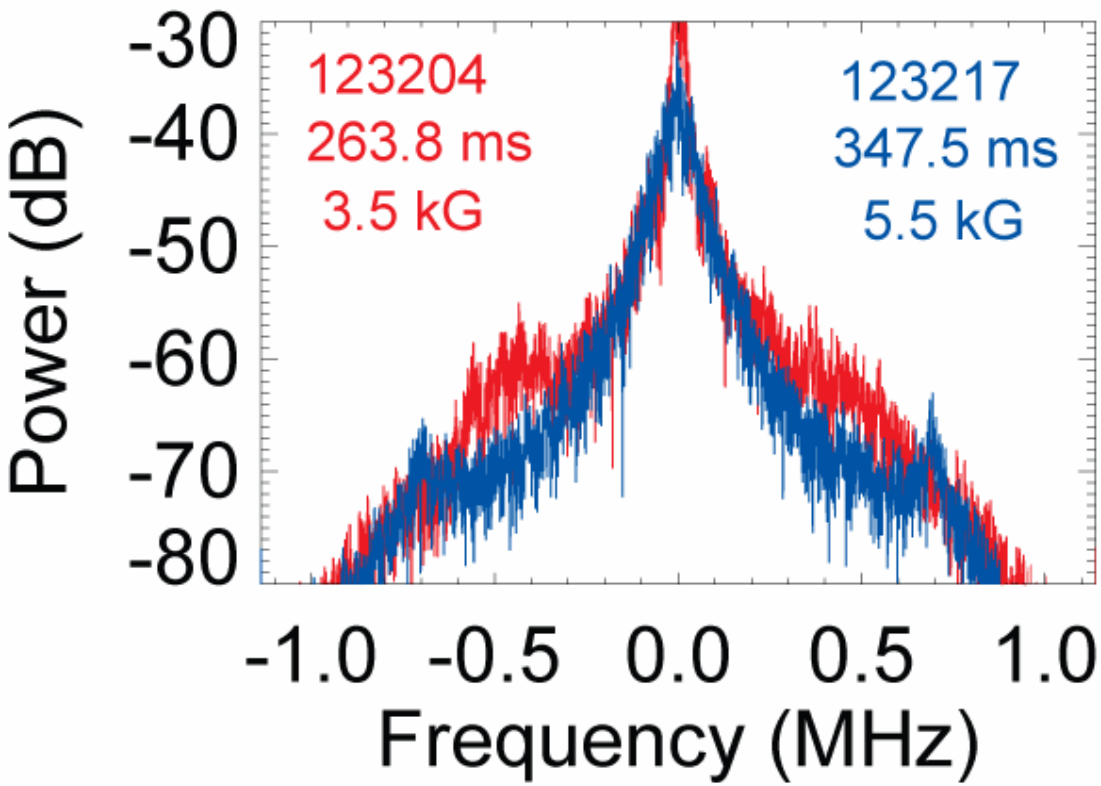
Shot Matrix

All shots: 1232xx

	r/a ~ 0.25	r/a ~ 0.5	r/a ~ 0.7
B_T = 3.5 kG	04-07	28	26
B_T = 4.5 kG	10,11,13	30	25
B_T = 5.5 kG	14,16,17	31	22-24

Preliminary Data

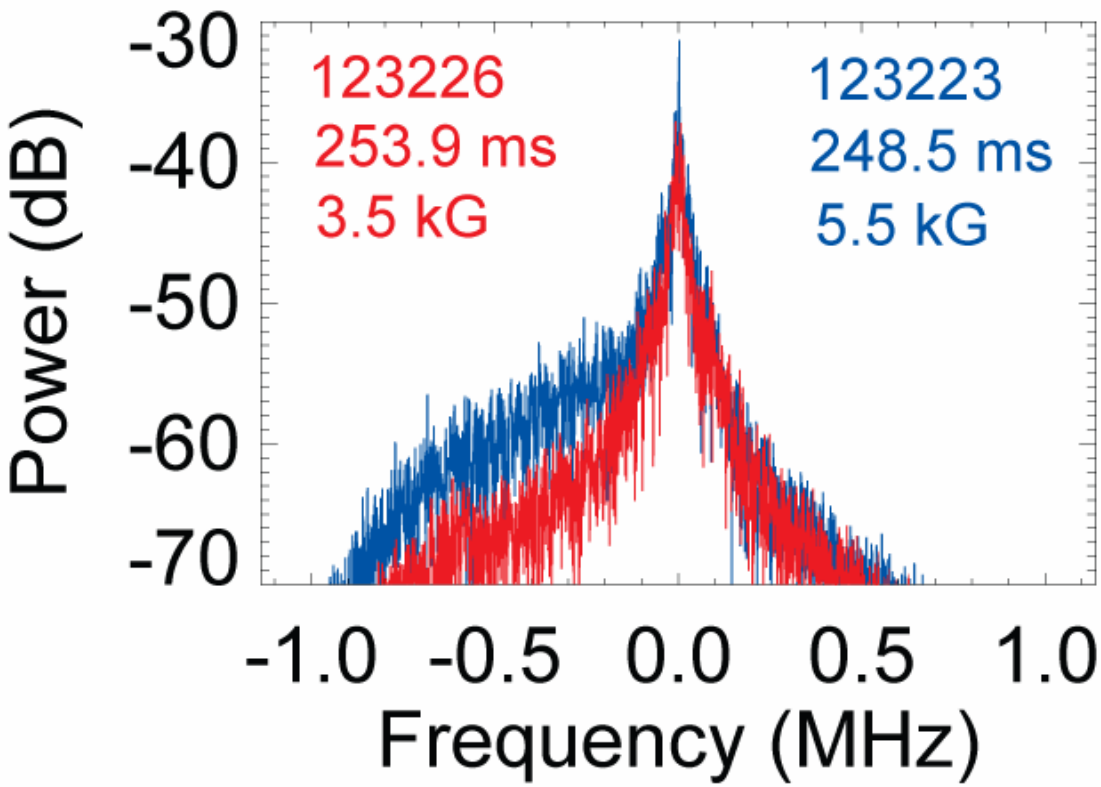
$k_\perp \sim 14\ cm^{-1}$ & $k_\perp \rho_e \sim 0.4$



At r/a ~ 0.25, fluctuations drop at higher B_T

Preliminary Data

$k_\perp \sim 9\ cm^{-1}$ & $k_\perp \rho_e \sim 0.2$



At r/a ~ 0.75, fluctuations increase at higher B_T

Preliminary Data

Saturation in low-k channel for r/a ~ 0.5