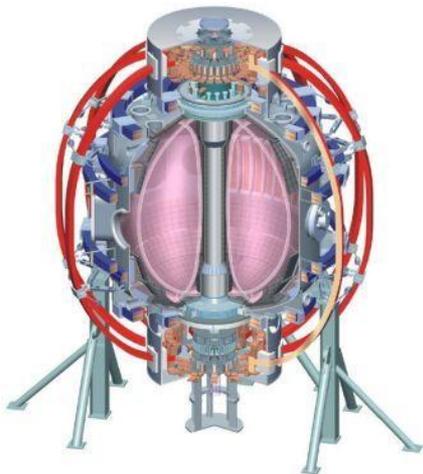


Summary of XP 1069 (Watching ELMs disappear with optimum turbulence diagnosis)

College W&M
 Colorado Sch Mines
 Columbia U
 CompX
 General Atomics
 INL
 Johns Hopkins U
 LANL
 LLNL
 Lodestar
 MIT
 Nova Photonics
 New York U
 Old Dominion U
 ORNL
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 SNL
 Think Tank, Inc.
 UC Davis
 UC Irvine
 UCLA
 UCSD
 U Colorado
 U Illinois
 U Maryland
 U Rochester
 U Washington
 U Wisconsin

J.M. Canik, ORNL

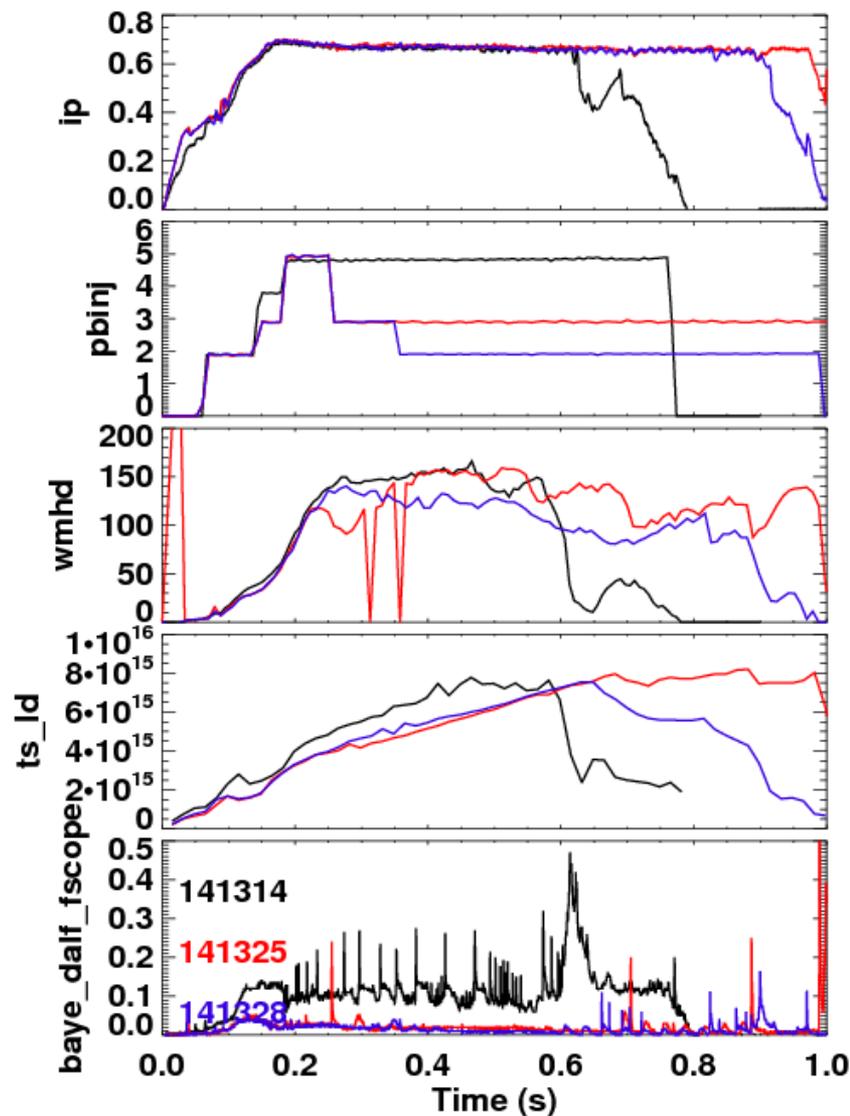
NSTX FY10 Results Review
Princeton, NJG
Dec 1, 2010



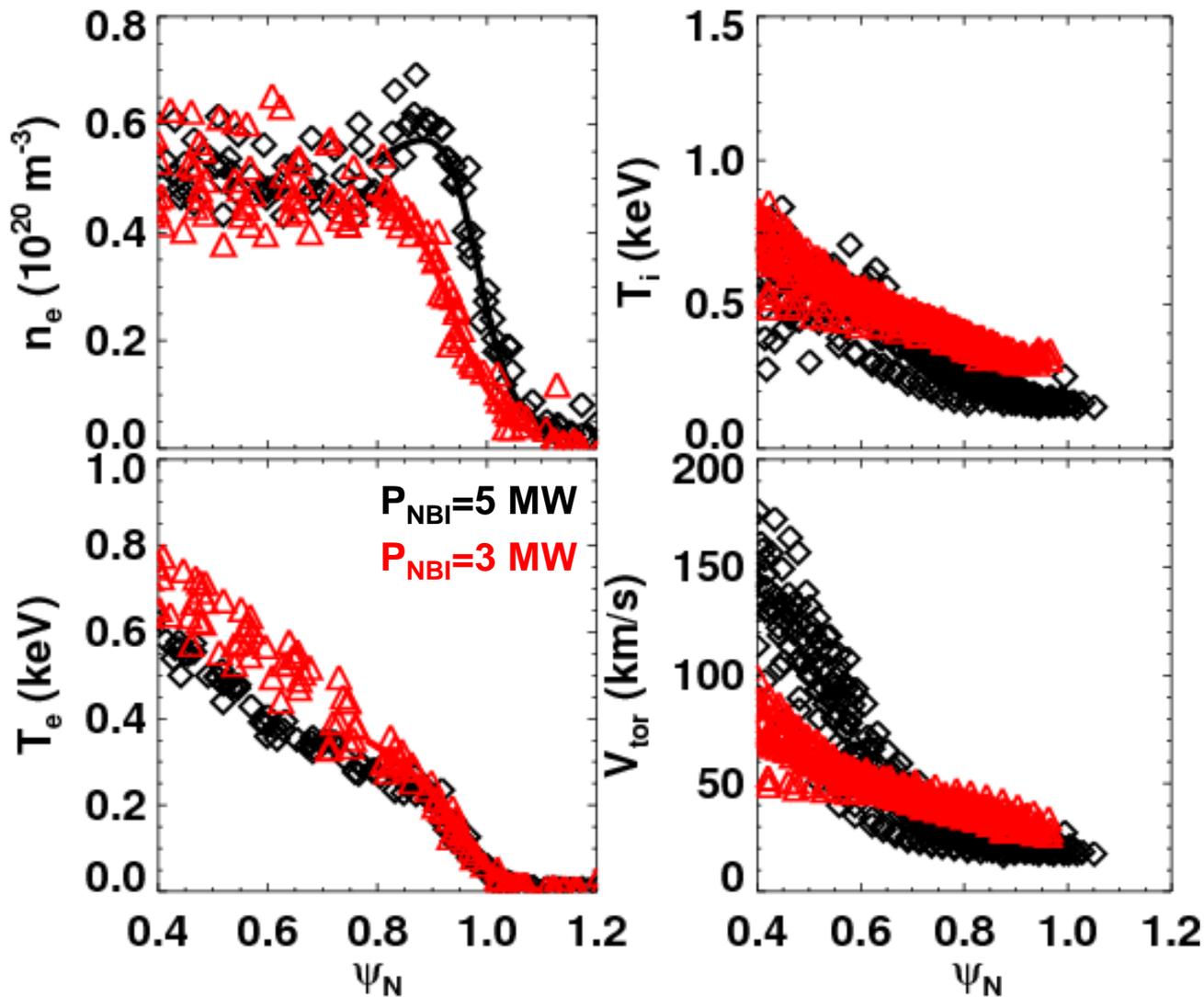
Culham Sci Ctr
 U St. Andrews
 York U
 Chubu U
 Fukui U
 Hiroshima U
 Hyogo U
 Kyoto U
 Kyushu U
 Kyushu Tokai U
 NIFS
 Niigata U
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 Ioffe Inst
 RRC Kurchatov Inst
 TRINITY
 KBSI
 KAIST
 POSTECH
 ASIPP
 ENEA, Frascati
 CEA, Cadarache
 IPP, Jülich
 IPP, Garching
 ASCR, Czech Rep
 U Quebec

XP 1069: Watching ELMs disappear with optimum turbulence diagnosis

- Goal: measure edge turbulence as lithium is applied and pedestal profiles modified
- Transition from low-lithium evaporation to high repeated for low-delta shape (~129015)
 - Discharges similar to 129015/38, except $I_p=650$ kA, $P_{\text{NBI}}=5\text{MW}$ (800/4 in 2008 shots)
- Previous trends seen again as Li increased
 - Lower density
 - Same stored energy for less power
 - Reduced recycling, ELMs gone
- Turbulence data obtained with high-k, BES, reflectometers, GPI
 - Analysis underway



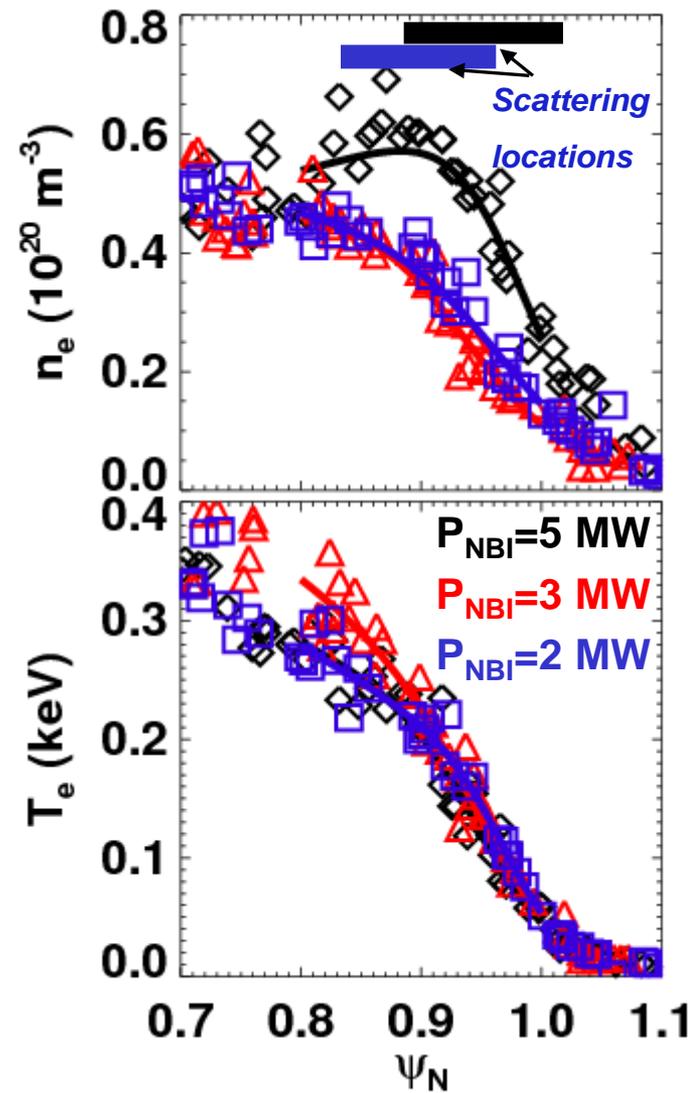
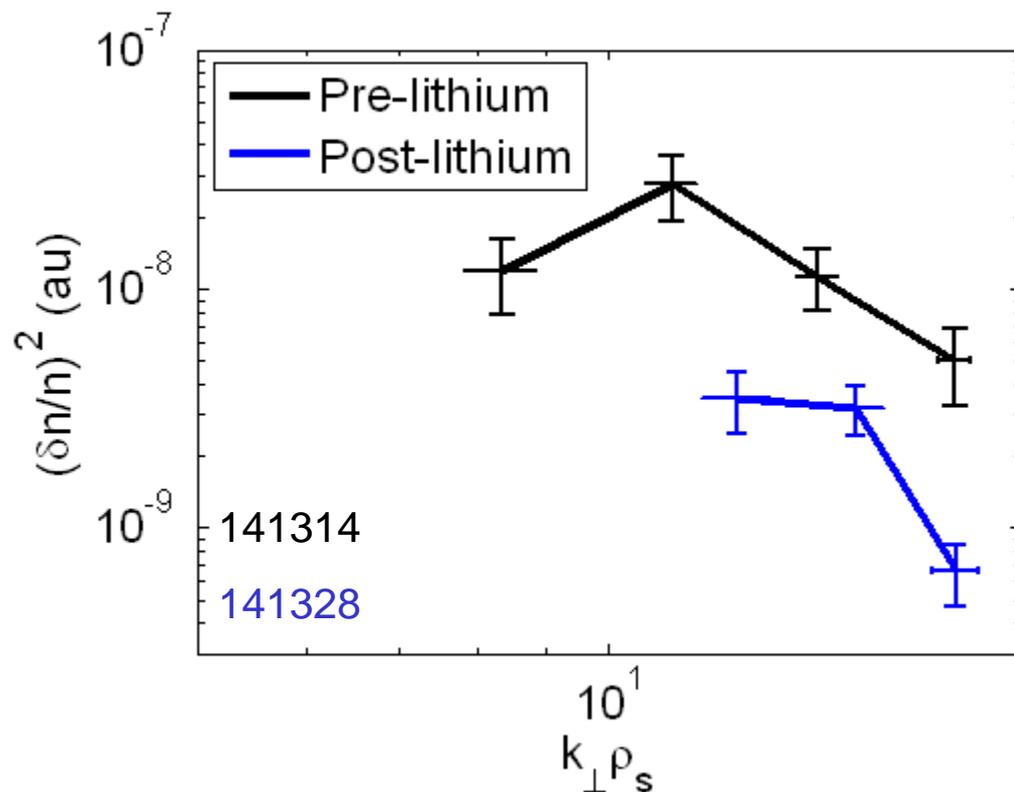
Pedestal profile analysis shows similar modification with lithium seen in 129000s



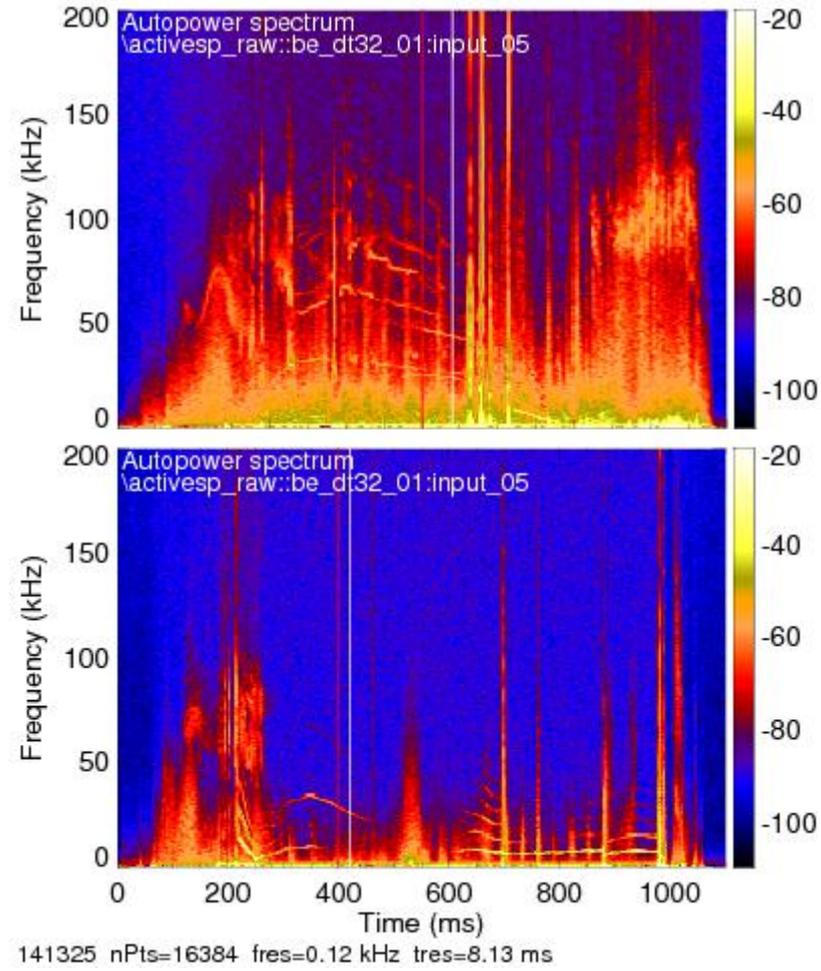
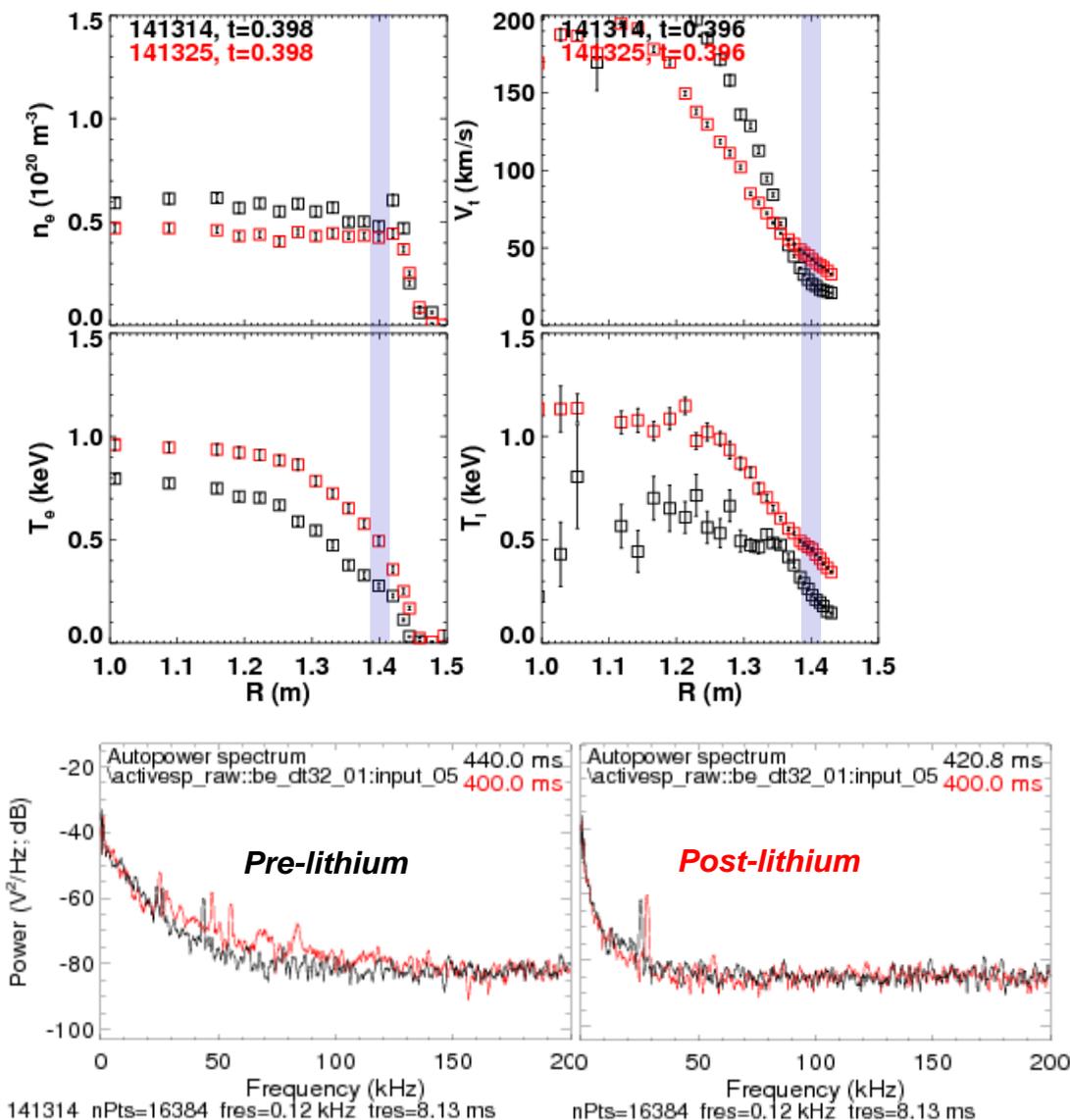
- Density gradient in pedestal reduced, pedestal widened
- T_e gradient higher from $\psi_N \sim 0.8-0.9$, similar outside
- Edge T_i and V_{tor} increased

With power reduced so T_e profile matches pre-lithium case, fluctuation amplitudes from high- k show broad reduction

- Power reduced to 2 MW
- T_e profile similar to pre-lithium
- Fluctuation amplitude reduced across measured $k\rho_s$



Preliminary BES data also shows reduced turbulence levels in post-lithium discharges



*Courtesy D.R. Smith, UW

