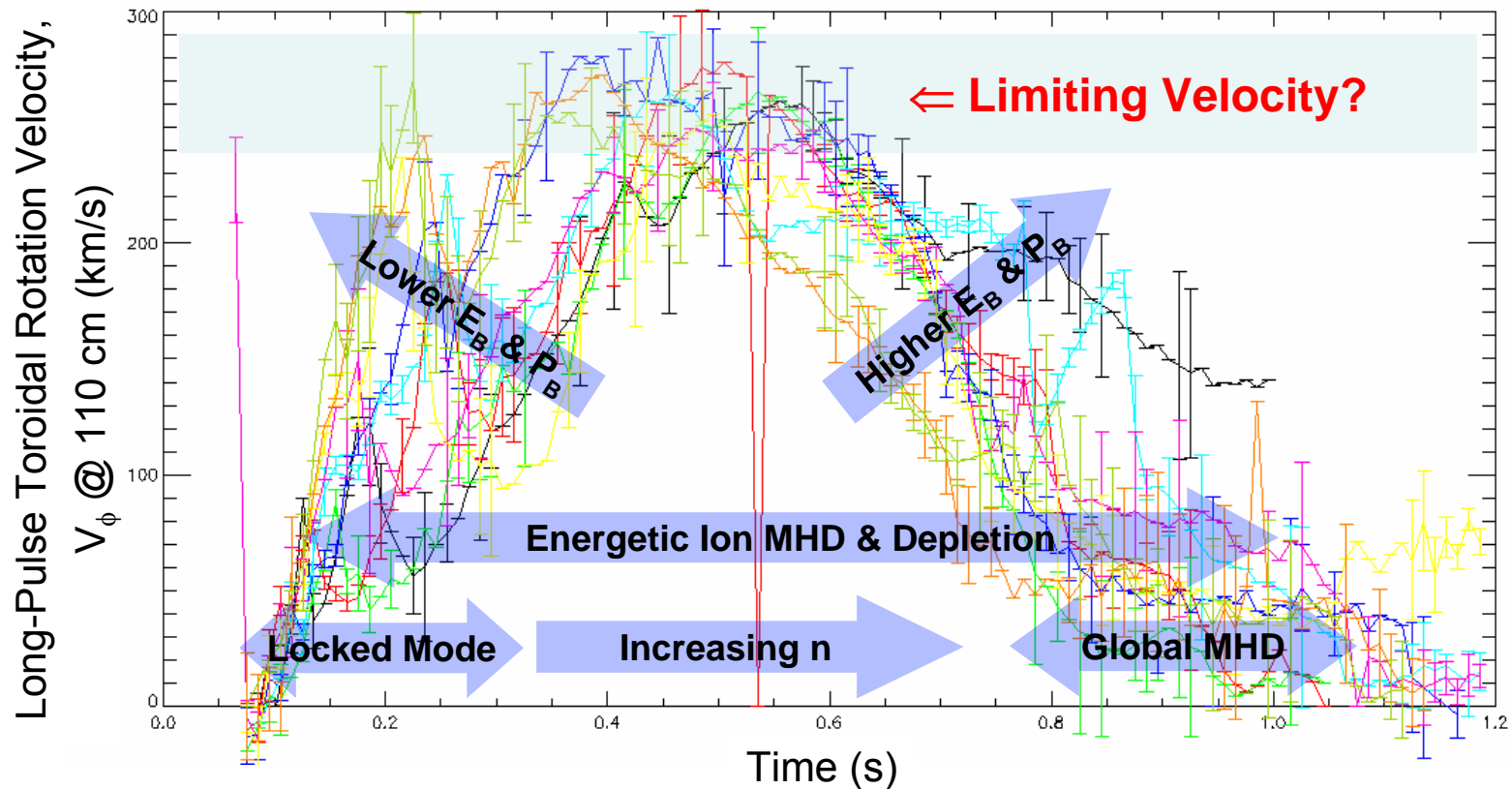


XP513: NSTX/MAST Identity Experiments on iITB Formation and Evolution: ITPA TP-8 (Peng, Field, R Bell, Menard, etc)



- **Goals of experiment: document and study**
 - **iITB formation and evolution** in H-mode plasmas on NSTX/MAST
 - **Dependence** of driven and ExB flow shear **on input momentum**
 - **Flow shear and q-profile effects** on iITB and low-k turbulence
- **Motivation: turbulence suppression & microinstability drive**
 - Zone ($\chi_i \sim \chi_{NC}$) **starts deeper** ($r/a \sim 0.5$) and moves out
 - **Evolves** to substantial zone ($r/a \sim 0.7 - 0.9$), sustained
 - Coupled to high **toroidal flow shear**
- **Produced on August 8, 2005, using 116318 scenario:**
 - NBI energy and power varied: 100 – 65kV, 7 – 3MW; step down
 - 10 in 23 shots with: $>1s$, low MHD duration = $0.2-0.5s > \tau_\phi$
 - Good documentation: CHERS, MSE; MHD, NPA spectra, EFITs
 - Results useful to other ISD, T&T, energetic ion mode, J_{NB} studies

Long-Pulse Results Are Consistent with Earlier Suspicion of Mechanisms That Limit Maximum Rotation



- iITB-like behavior remains; new stationary V_ϕ profiles for ≤ 250 ms
- MAST experiments scheduled for Sept – Oct 2005
- Data analysis and modeling underway