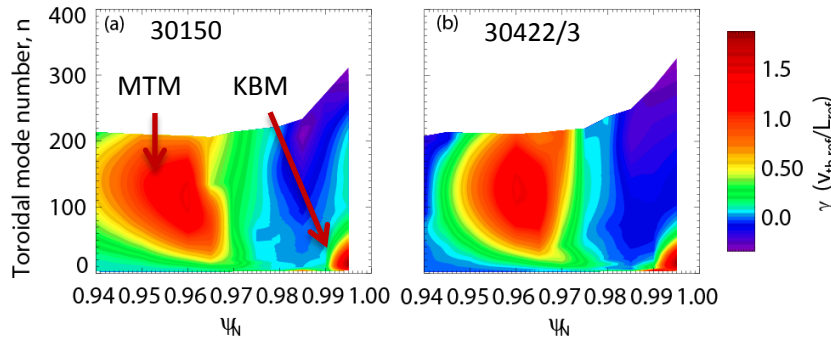
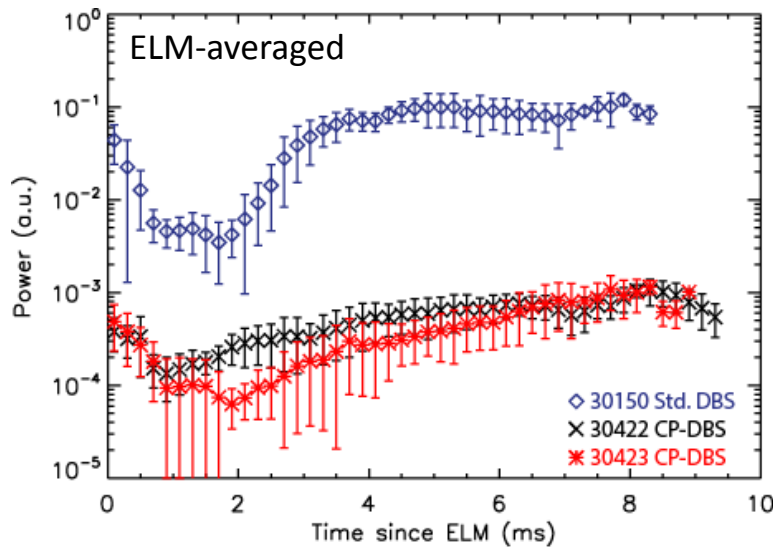


# Cross-Polarization Doppler Backscattering Measurements and Microtearing at the Top of the MAST H-mode Pedestal



Top: Intermediate- $k$  density (blue) and magnetic field (black & red) fluctuations measured at the top of the MAST pedestal  
 Bottom: Growth rate calculations for last 1/3 of ELM cycle with GS2 showing microtearing unstable at top of pedestal,

- Cross-polarization Doppler backscattering (CP-DBS) used to measure local, internal magnetic field fluctuations
- Both standard DBS and CP-DBS measurements made at top of MAST pedestal between type I ELMs
  - Differences observed in amplitude and temporal evolution
- Gyrokinetic linear stability calculations show microtearing modes unstable at top of pedestal, but unexpectedly at lower than measured wavenumbers
- Increase in density fluctuations at intermediate- $k$  2-3 ms after ELM correlated with arresting of density profile recovery