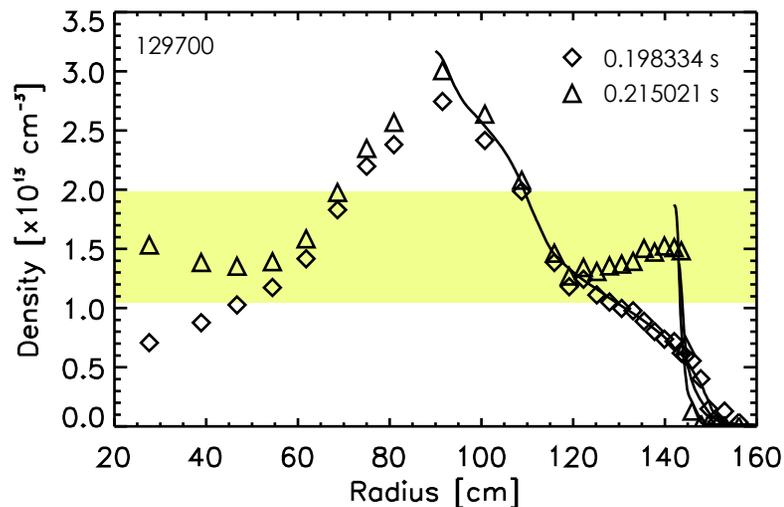


# Results from XP-506: Ohmic H-Modes (S. Kubota)

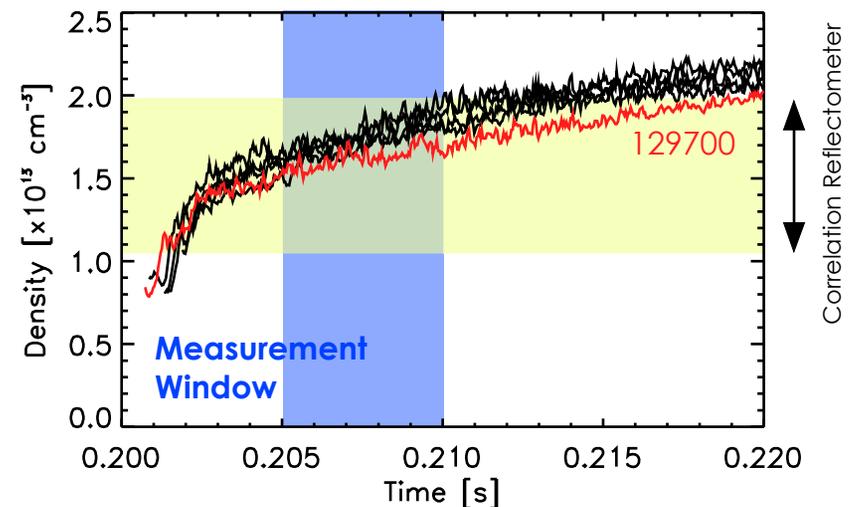


- **Goals:**
  - Turbulence properties across the L-H transition.
  - Changes in the correlation length (requires plasma is stationary~few ms). If edge is measurement is not possible -> infer from core.
  - Evolution of edge pedestal/ear (prevents core accessibility).
- **Tools:**
  - Reflectometers (profile, fixed frequency, correlation).
- **Previous results reinforced:**
  - Core signal characteristics change little **except for correlation**. (reduction in turbulence correlation length).

## Electron Density Profile Evolution



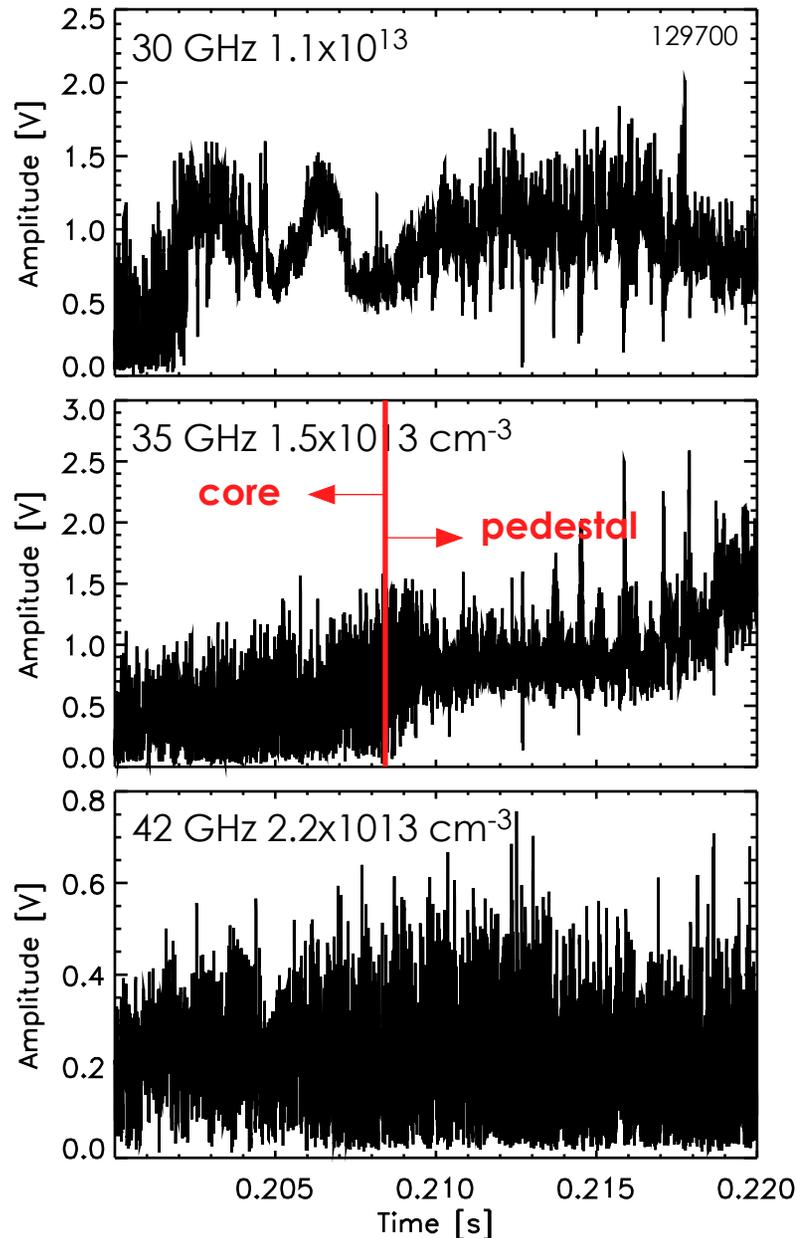
## Pedestal Height from tanh fit



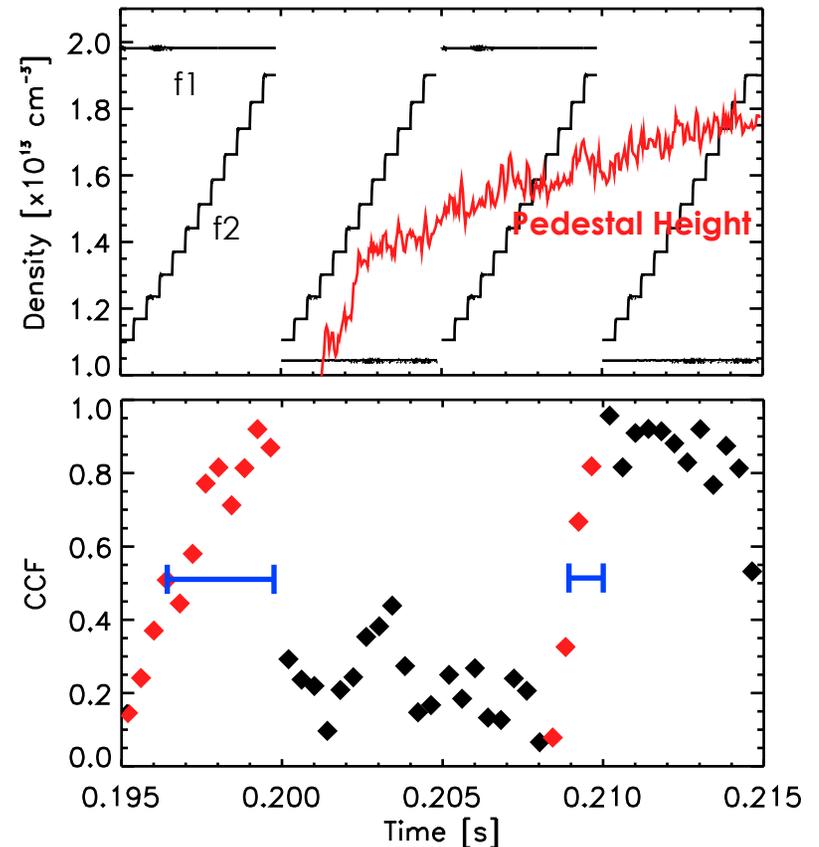
# Evolution of Density and Turbulence at the L-H Transition



Fixed Frequency Reflectometer Data  
Consistent with Profile Measurements

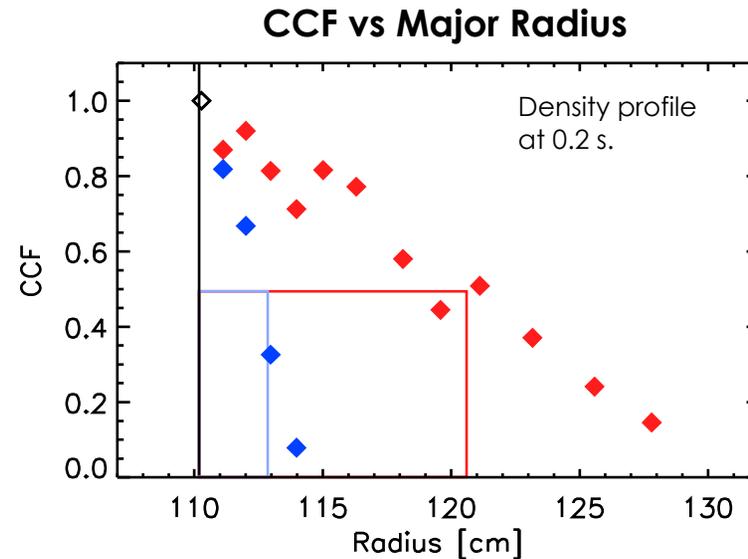


One channel of correlation reflectometer  
stepping in frequency (or density/radius).



CCF Width Decreases by a Factor of >3

# Radial Correlation Length Decreases By 4



- **Summary**

- XP-506 finally finished after 3 year wait.
- Uncertainty of pedestal height eliminated from correlation length measurements.
- Correlation length decreases by a factor of 4 after L-H trans.

- **Follow Up**

- 2D/3D simulations with full-wave codes for quantitative estimate of correlation length (fluctuation levels, spectra, etc.).

- **Can we make better measurements at the edge?**

- Use profile reflectometer (10  $\mu$ s sweep) as a radial correlation reflectometer. Pinpoint correlation measurements in time and space.