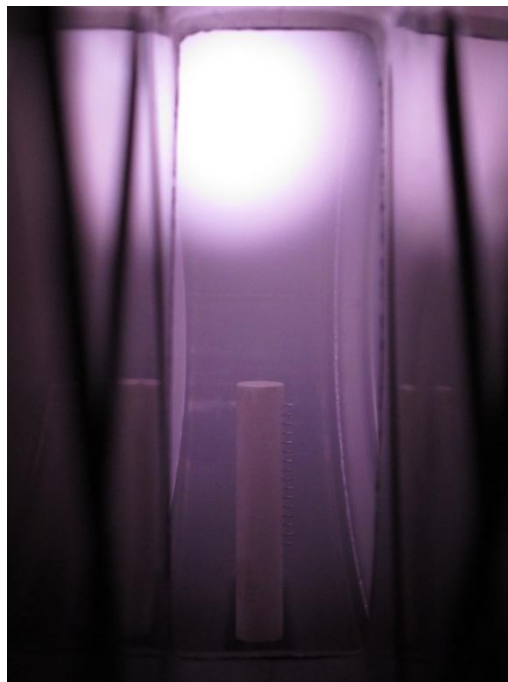




2012/2013
Golem, Prague

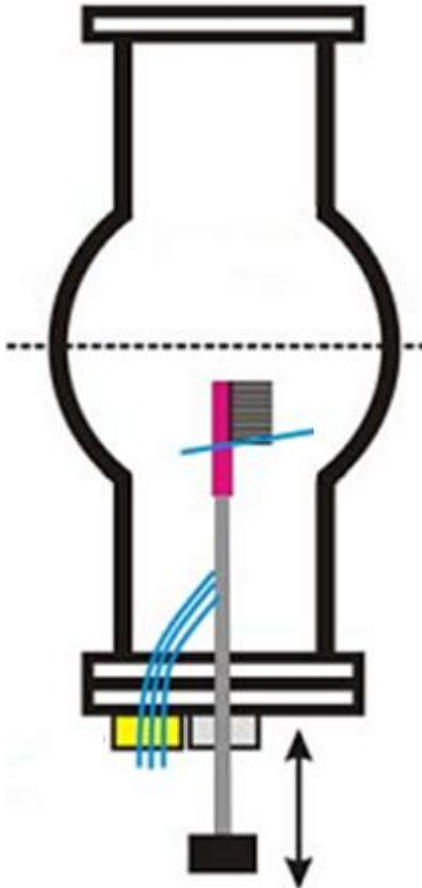
GOMTRAIIC

Electrostatic Probe



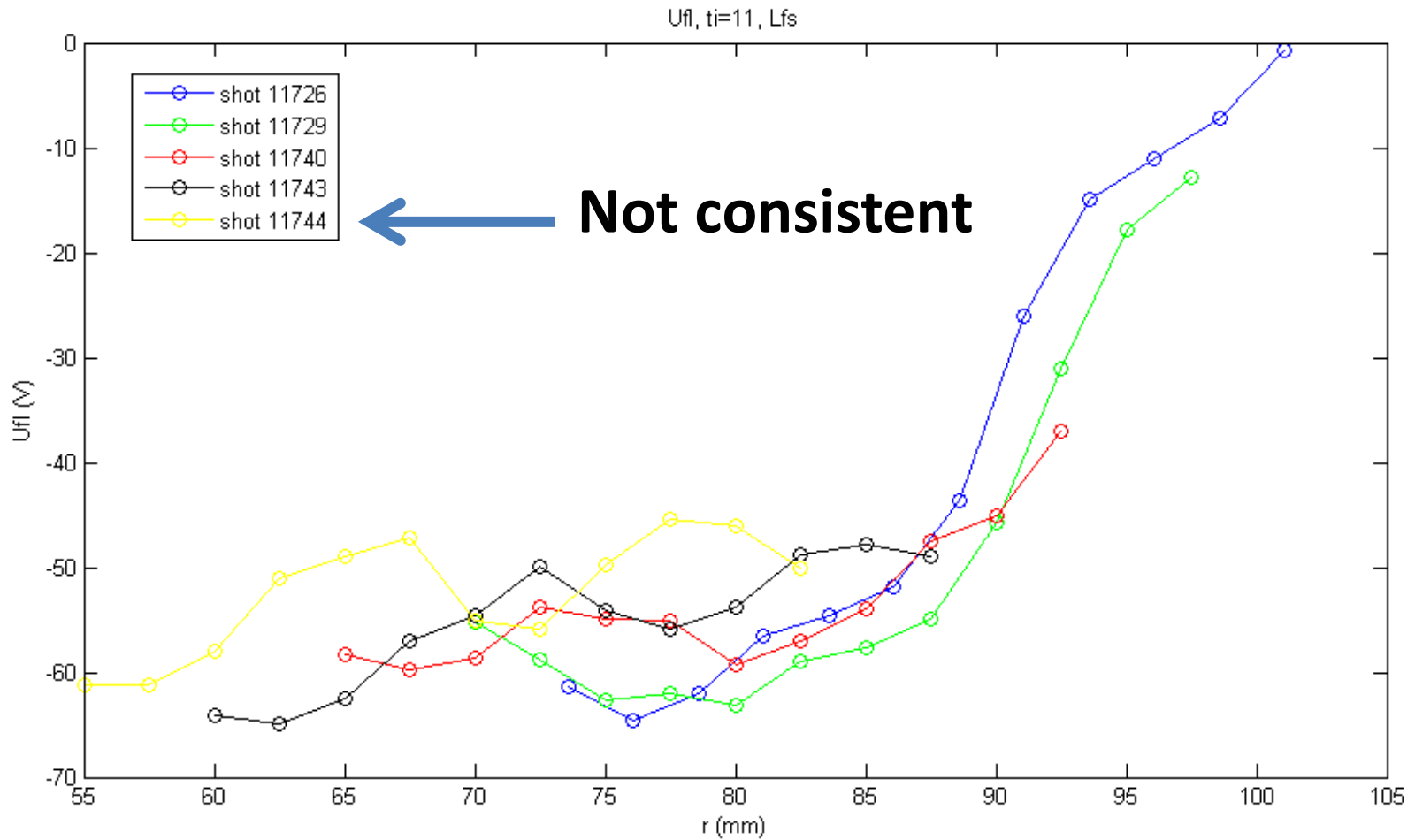
Supervisor:
Jana Brotankova

1. The probe



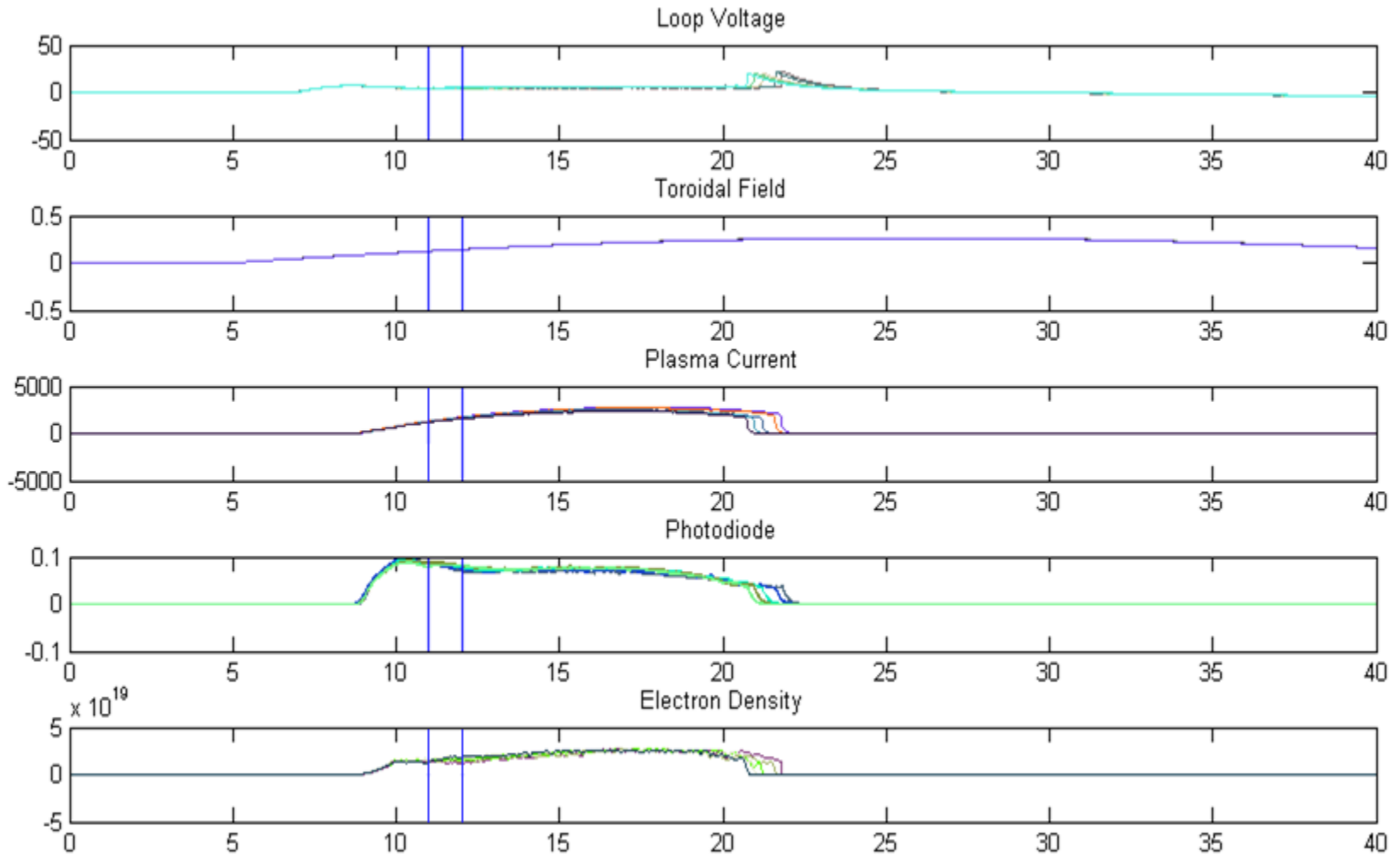
2. Radial Profile

A. Floating Potential



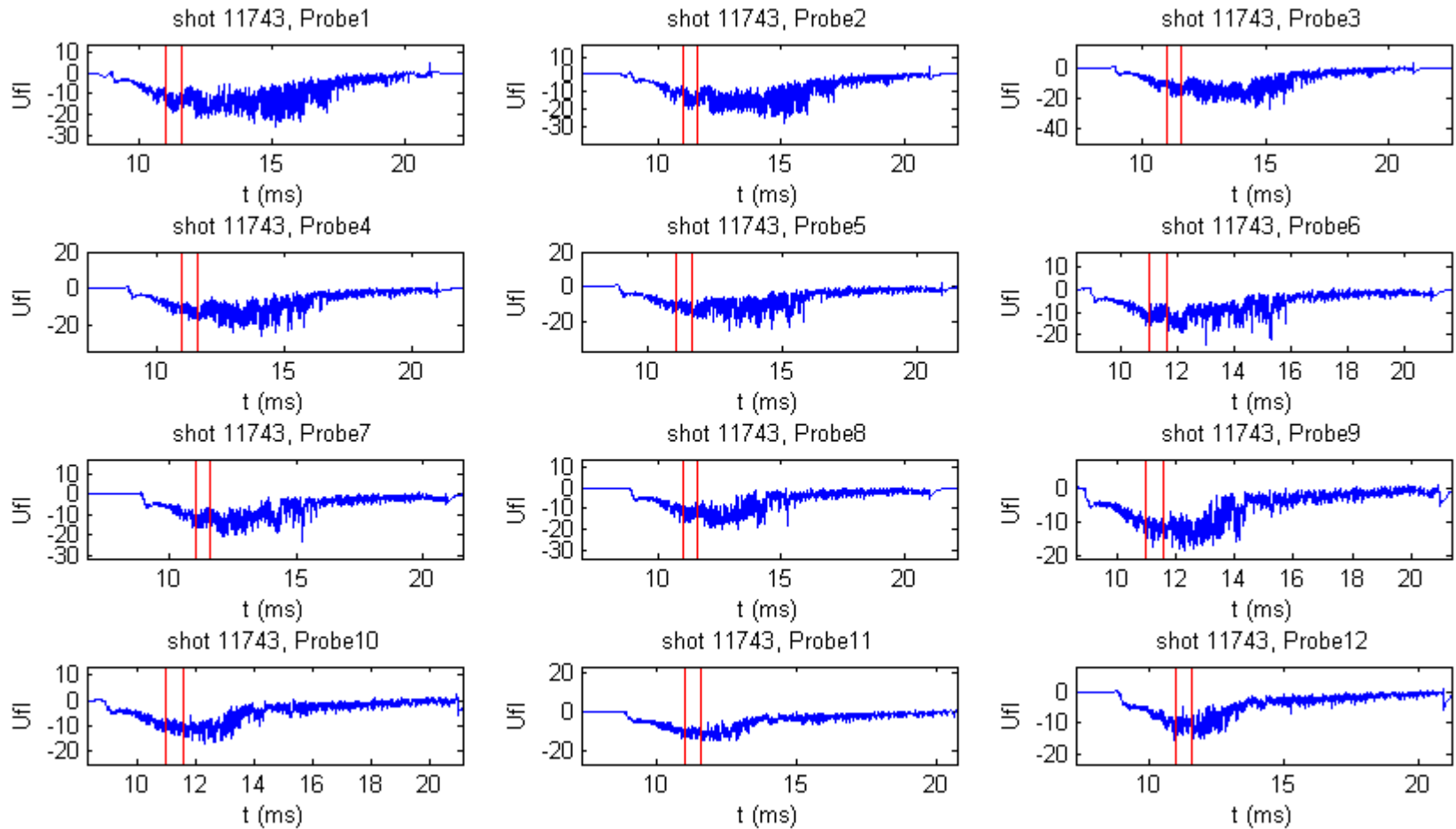
2. Radial Profile

A. Floating Potential



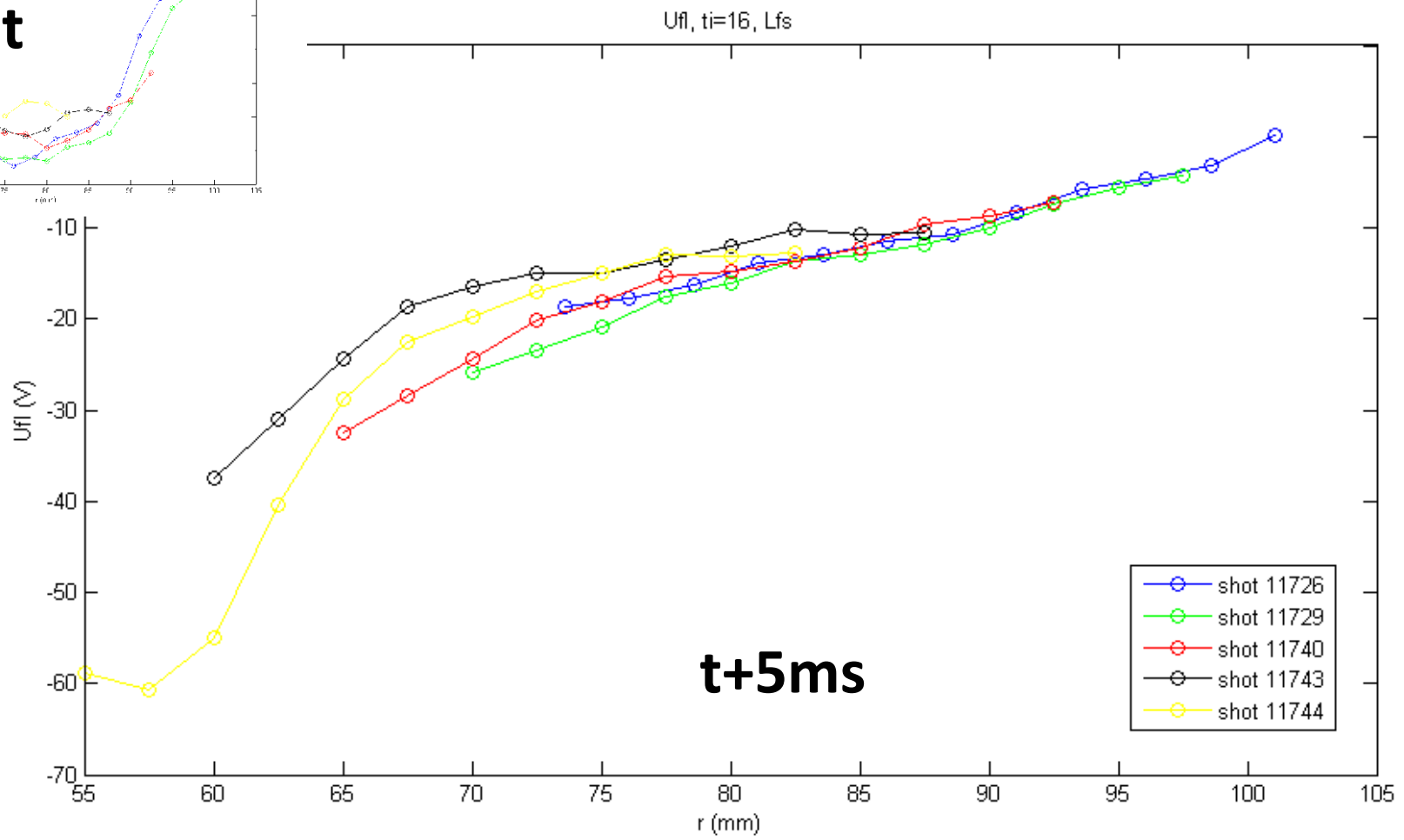
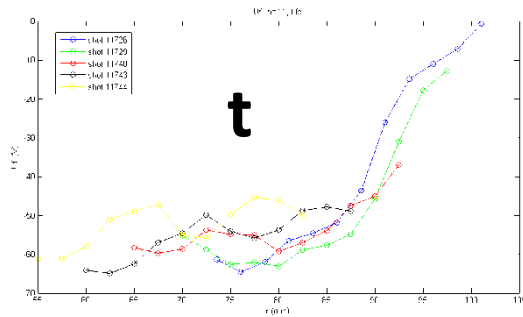
2. Radial Profile

A. Floating Potential



2. Radial Profile

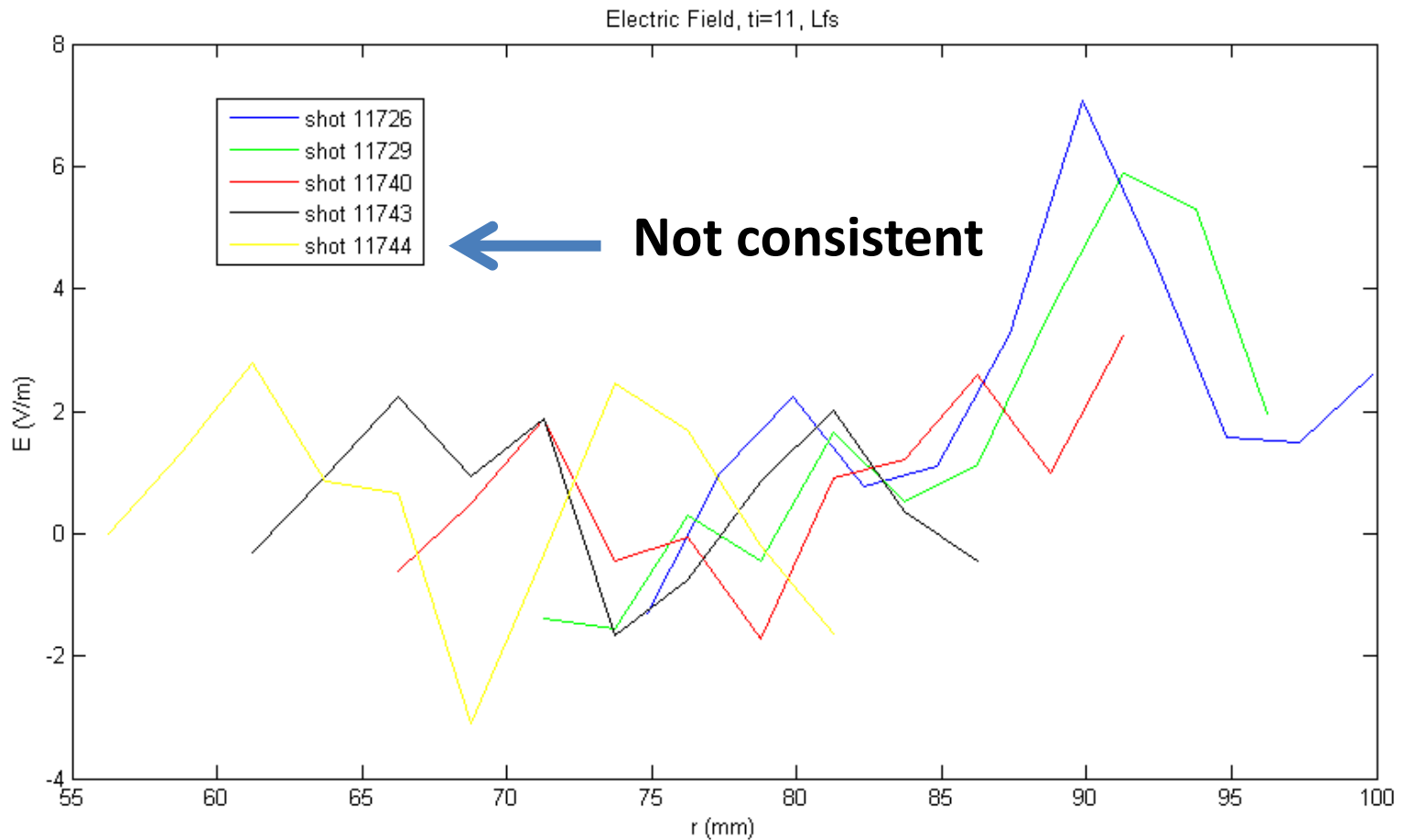
A. Floating Potential



2. Radial Profile

A. Floating Potential – Electrical Field

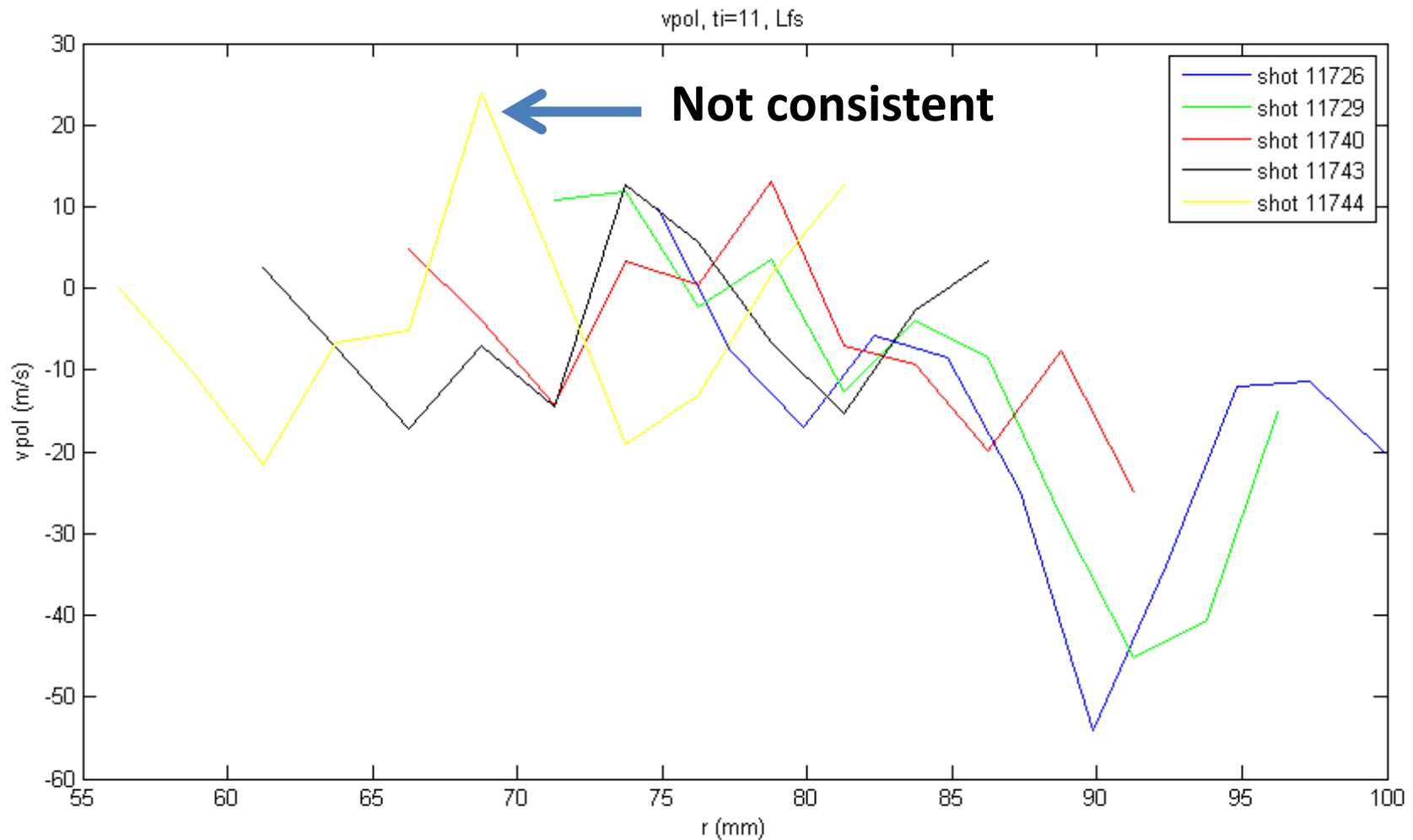
$$E_{\text{rad}} = -\text{grad } U_{\text{fl}}$$



2. Radial Profile

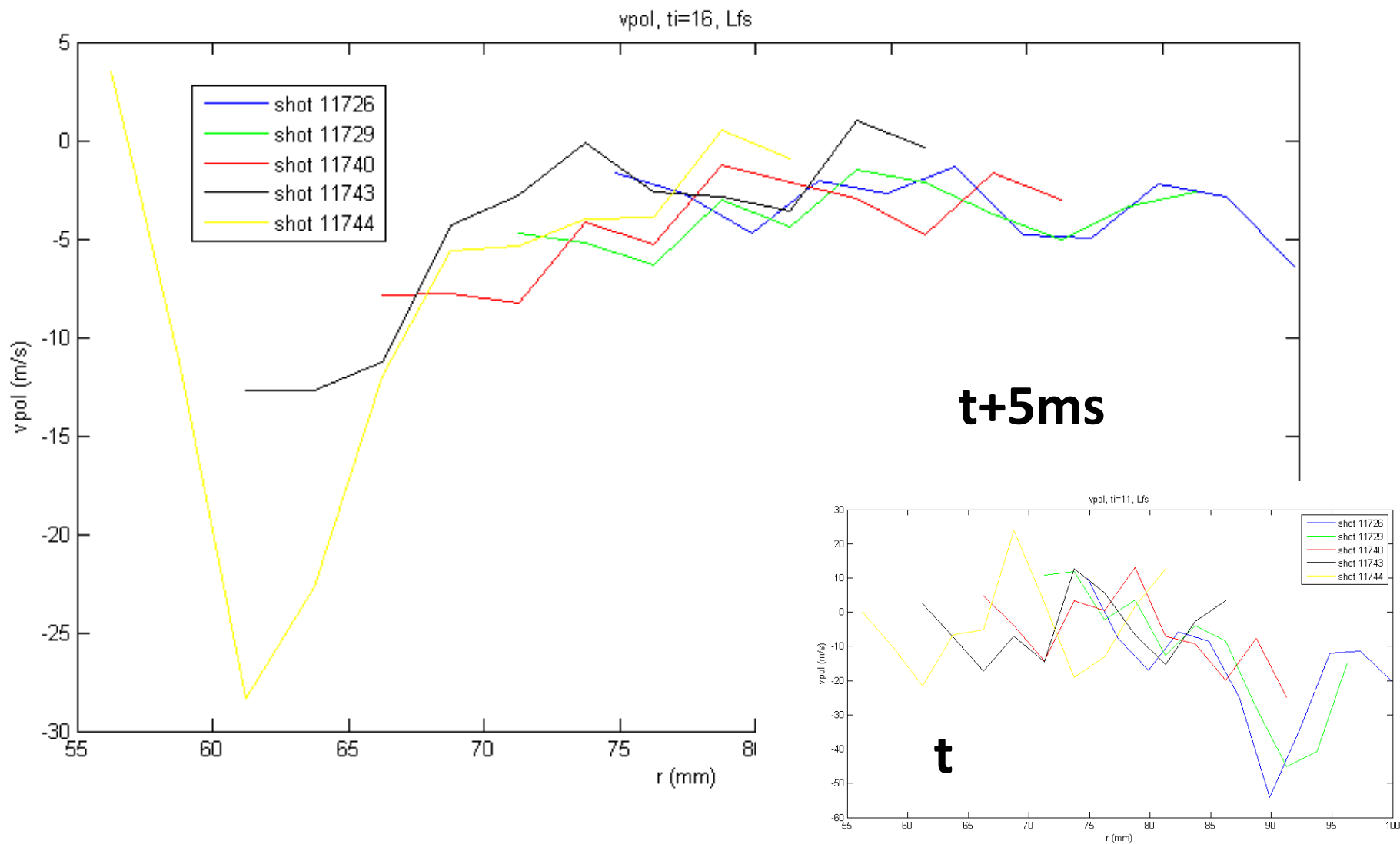
A. Floating Potential – Poloidal Velocity

$$V_{\text{pol}} = E_{\text{rad}}/B_T$$



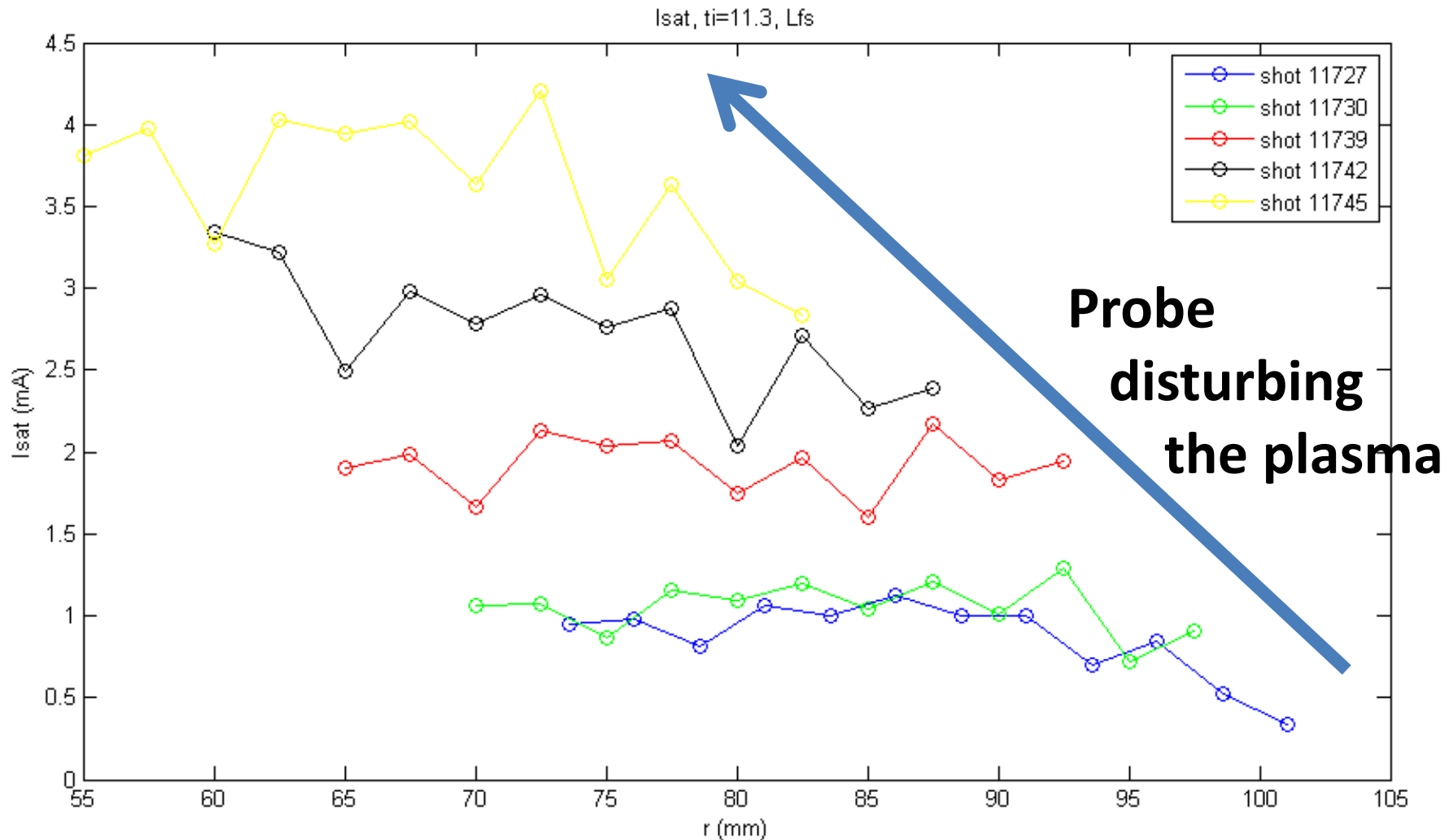
2. Radial Profile

A. Floating Potential – Poloidal Velocity



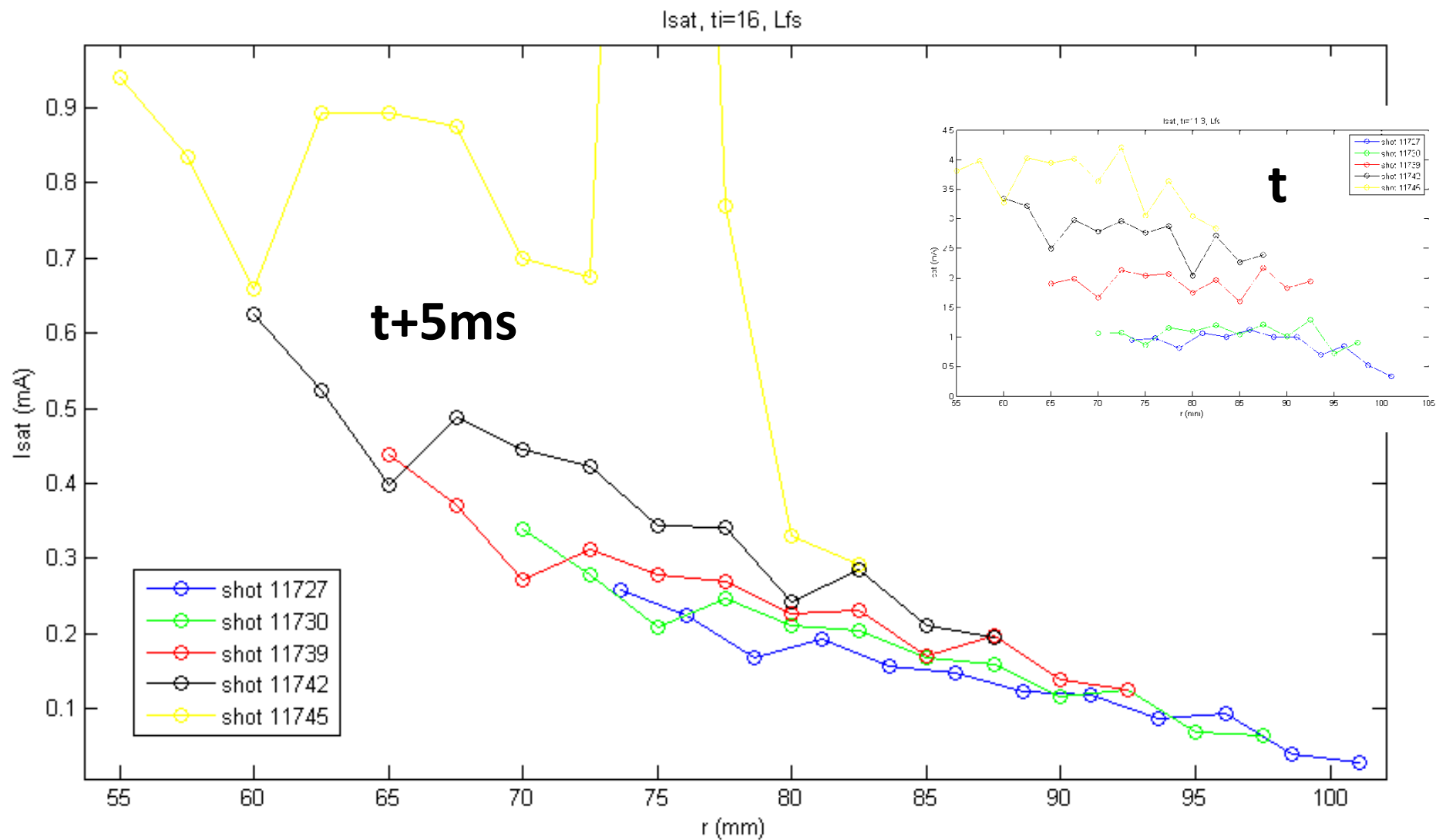
2. Radial Profile

B. Ion Saturation Current



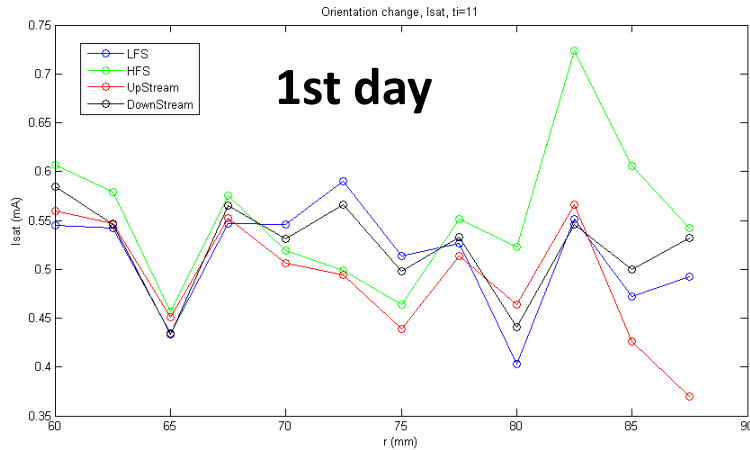
2. Radial Profile

B. Ion Saturation Current

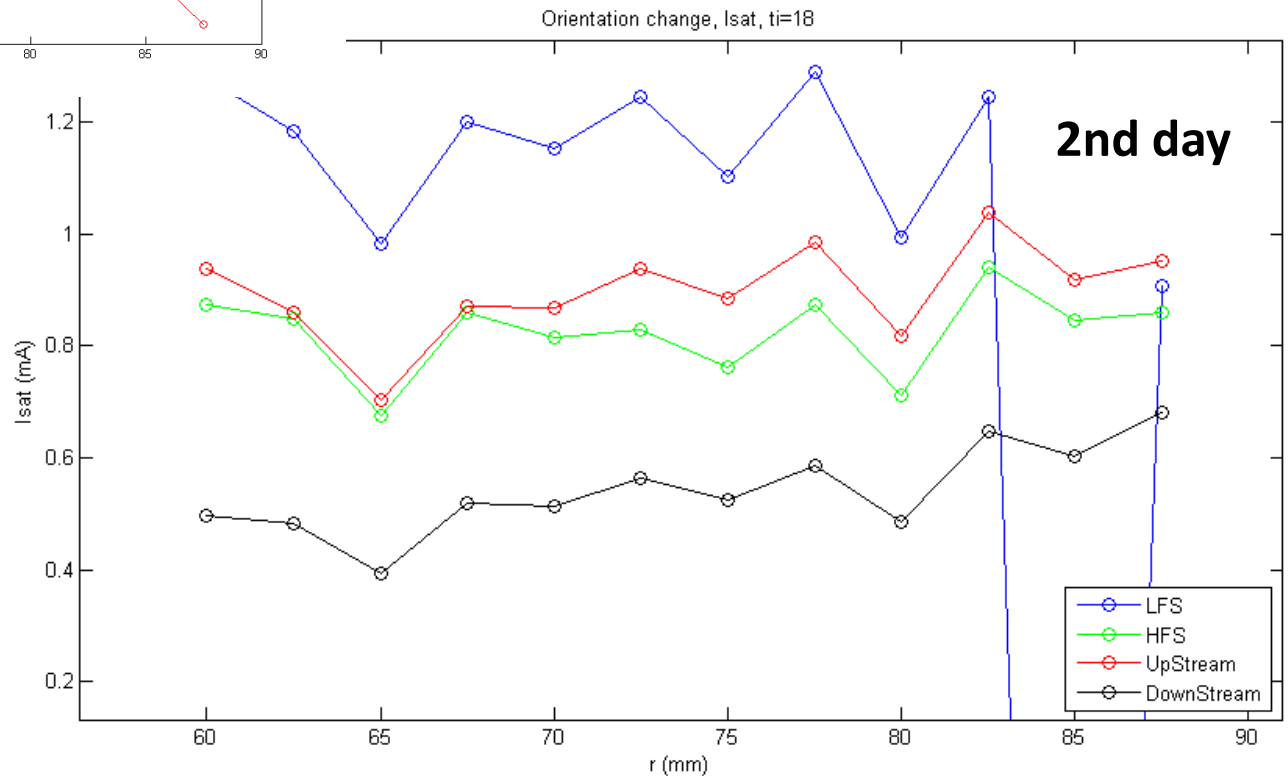


3. Probe Orientation

A. Ion Saturation Current



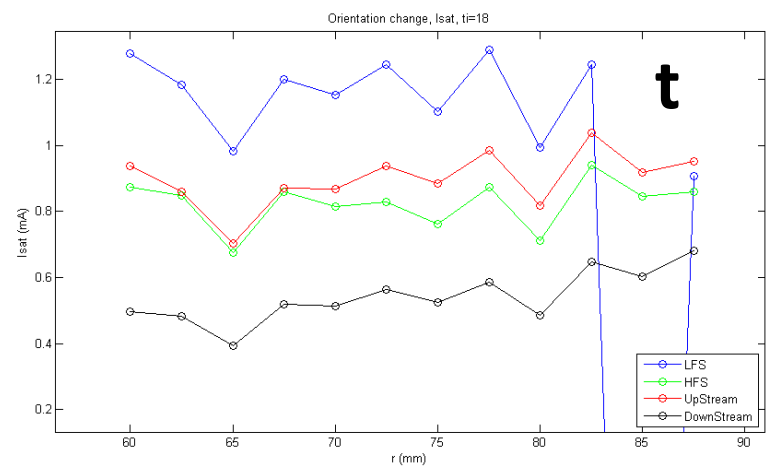
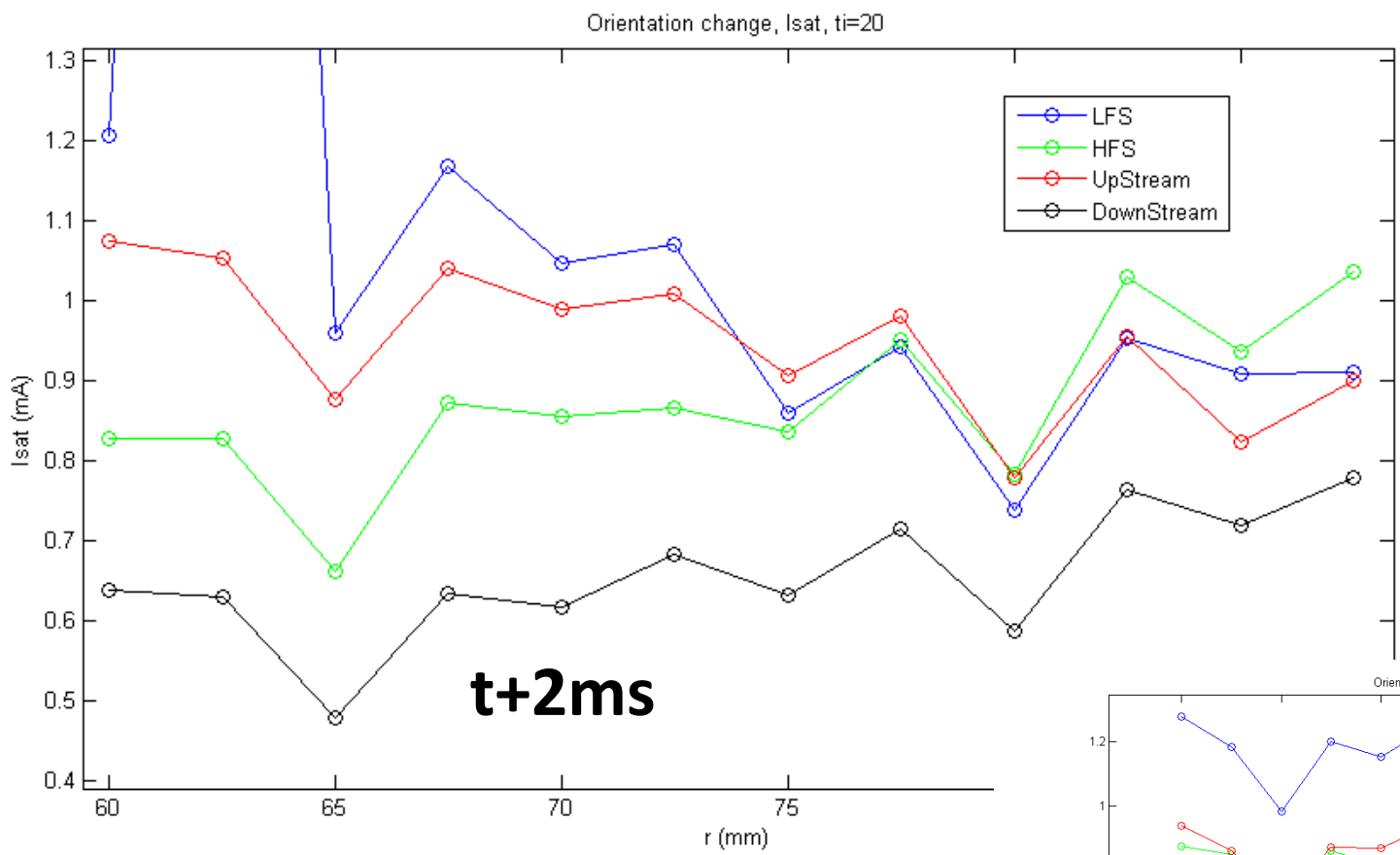
← **Mess**



3. Probe Orientation

A. Ion Saturation Current

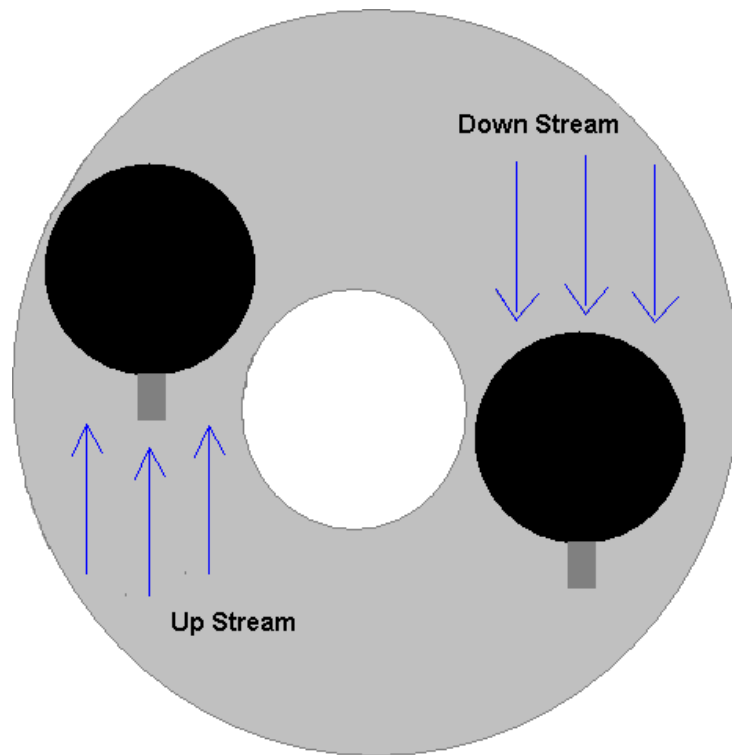
2nd day



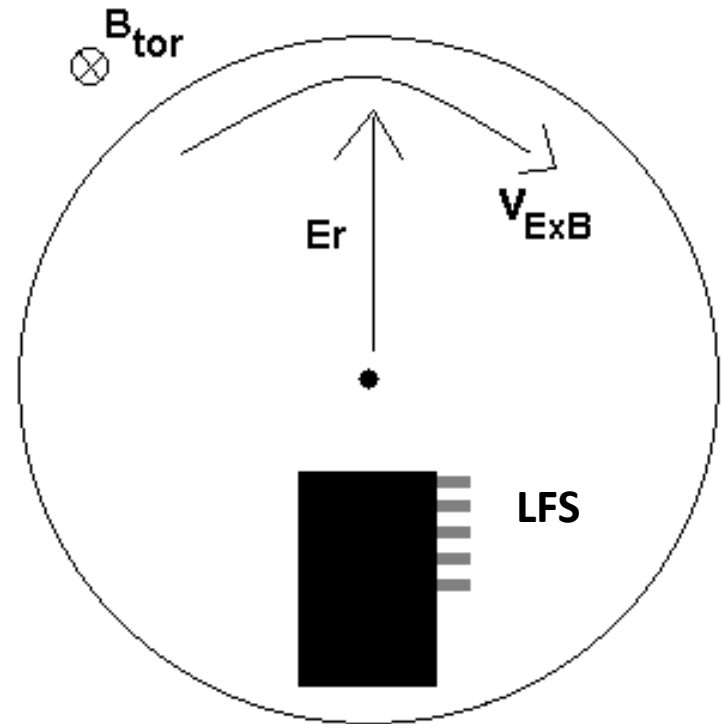
3. Probe Orientation

A. Ion Saturation Current

Top view



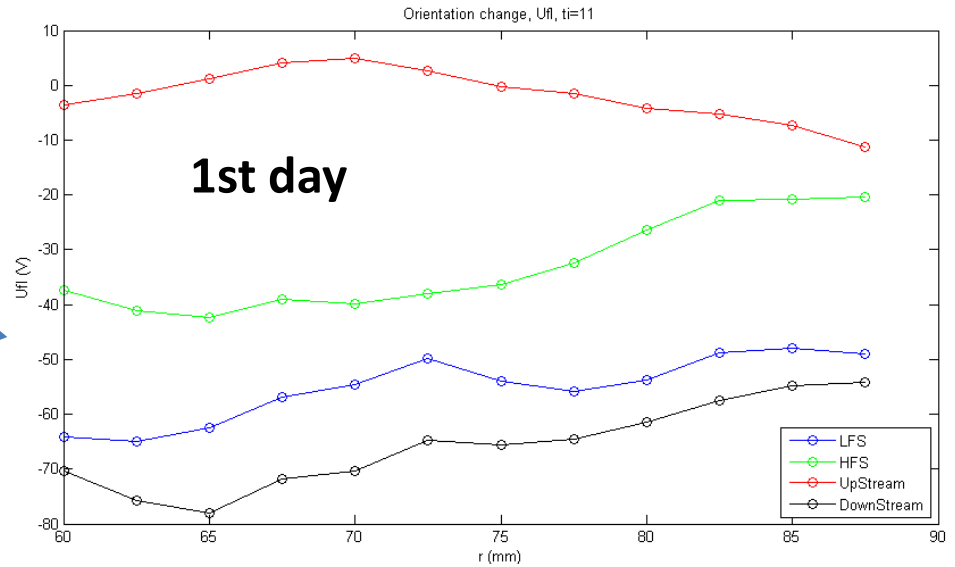
Poloidal cross-sectional view



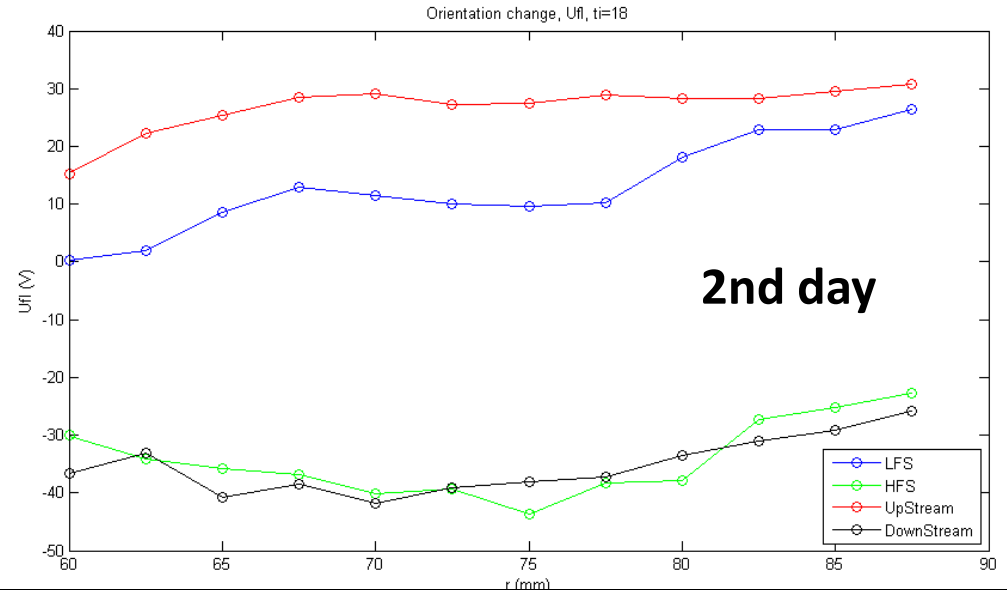
2. Probe Orientation

B. Floating potential

Opposite behaviour of LFS and HFS



Consistent with expectation



3. Conclusions

- Radial profiles of U_{fl} and I_{sat} were measured:
 - For deeper positions the plasma is disturbed by the probe
 - Safe depth of the probe was estimated
- Radial electrical field and poloidal velocity were determined
- Polar dependence of radial profiles of U_{fl} and I_{sat} were measured:
 - Four angles of Langmuir probe were measured
 - For some regimes, results are consistent with expectations
 - We found very inconsistent regime => we need to be careful about LFS and HFS
- Gomtraic doesn't end up today