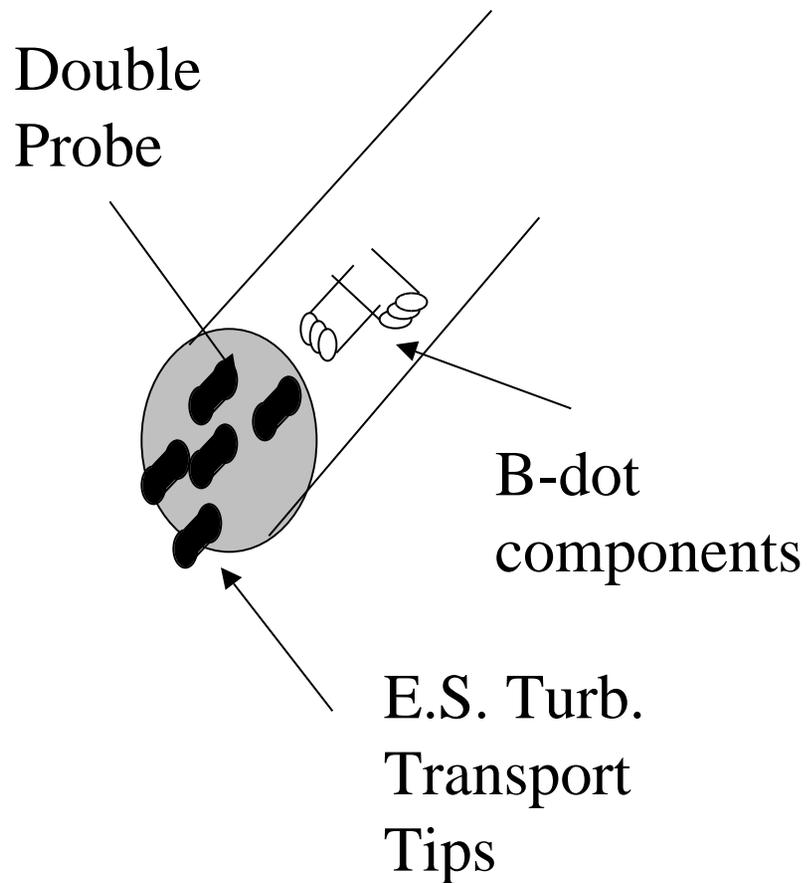


Motivations for Edge/SOL Probe in HHFW CD Studies

- Coupling to start-up plasma
- Study edge plasma and RF field amplitude/phase
 - S.S. & transients
 - High beta/high edge magnetic shear effects

Tip concept



- Multiple langmuir probe tips
- Embedded b-dot (Hall probe ?) sensors
- Can penetrate to region with $\sim 10^{13} \text{ cm}^{-3}$, $T_e \sim 75 \text{ eV}$ with proper design
- Issue: RF magnetic flux penetration & materials selection

Edge Probe w/ RF B-dot Would Provide

- **Radial plasma profiles and propagating wave amplitude and spectrum in steady-state moderate and high performance ST discharges with ~mm spatial resolution**
- **Temporal evolution of plasma properties and propagating wave amplitude and spectrum at fixed spatial locations during transient events**
- **Constraints on models of wave coupling and propagation in the edge region**
- **Observations of RF modifications of edge plasma profiles due to DC convection, ponderomotive, or other nonlinear RF effects.**