

**FY03 Plans for
HHFW Current Drive Modeling with CURRAY**

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Three Tasks

- Analyze HHFW CD discharges in latest campaign
- Complete coupling of CURRAY to TRANSP
- Benchmark CD calculations with CQL3D

Analysis of Latest CD Shots

- Complete calculation of driven currents for latest CD shots with $\pm 45^\circ$, $\pm 90^\circ$ and dipole phasing for APS/DPP02.
- Investigate effect of DC electric field on HHFW CD.
 - Determine its importance
 - Incorporate effect into CURRAY
 - \$ useful for current profile control simulation.
- Has CURRAY somehow over-estimated the RF current ? Need to make sure.
- Robustness of CURRAY to equilibrium retrieved from MDS+ tree needs to be improved.

Coupling of CURRAY to TRANSP

- One week visit to PPPL in August to work with D. McCune's Group results in good progress being made.
- The interface via the Xplasma module is almost complete, in conjunction with NTCC work.
 - However, plan is to make CURRAY a subroutine called from TRANSP. [Kumar, PPPL]
- Aim for achieving a combined code test run before APS/DPP02.
 - Code robustness
 - Accuracy

Compare CURRAY CD Results with CQL3D

To address a few questions of interest to NSTX:

- How do CURRAY adjoint CD results compare with Fokker Planck codes?
- Is quasilinear effect important in determining electron damping for NSTX?
- Is damping and current drive modified in presence of dc E-field? In what regime?

--- Will work with Harvey. { The West Coast Clique }