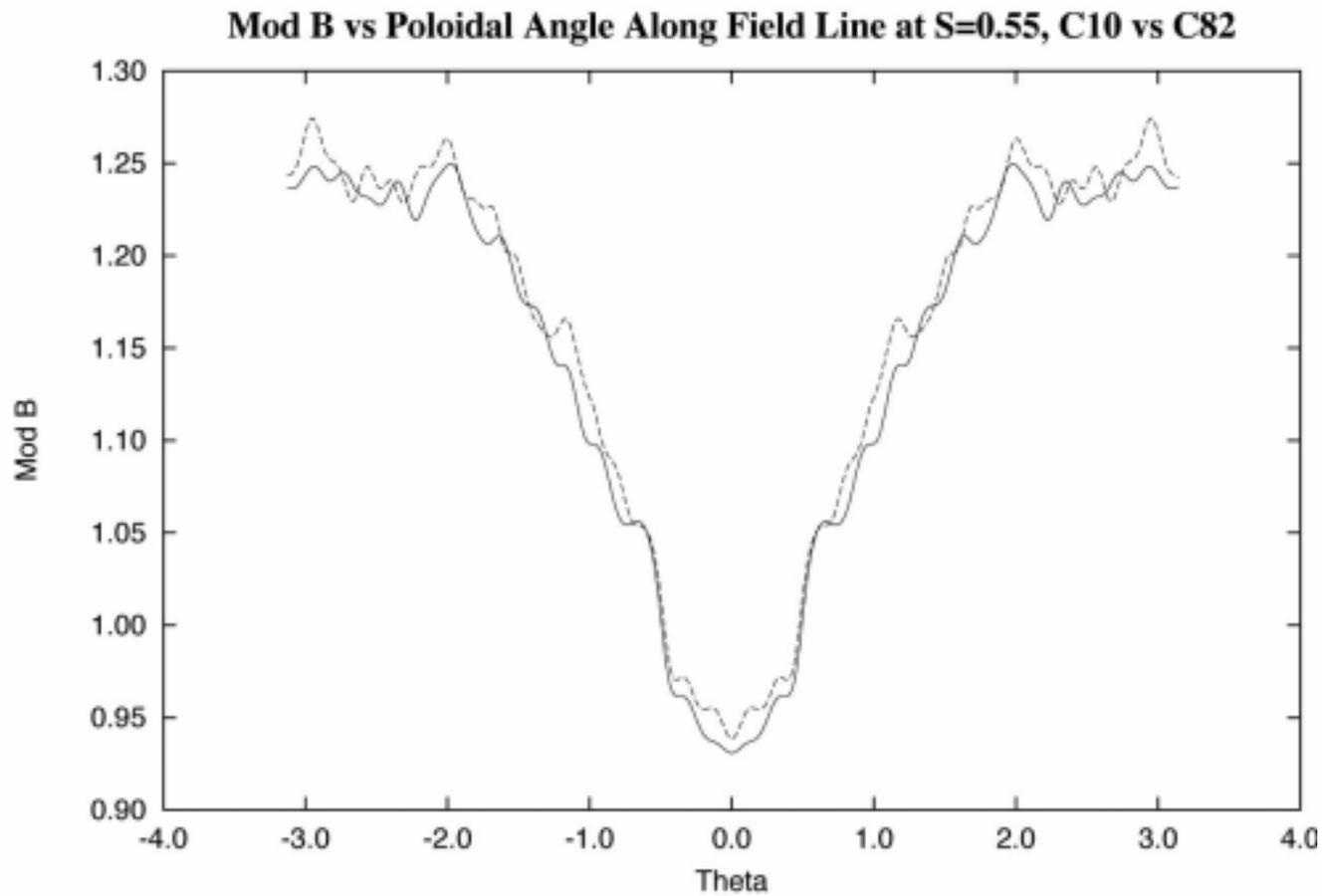


# Configuration Development Update

## L. P. Ku

- Task 1: improve QA of C76.
- Task 2: find alternate paths to C76 from C10.
  - Iota profile control,
  - Current profile optimization.

Task 1: Continued optimization for C76 has led to C82 with improved QAness.  
The QAness is now approaching that of C10



## Task 2: Alternate path -- biased iota profile

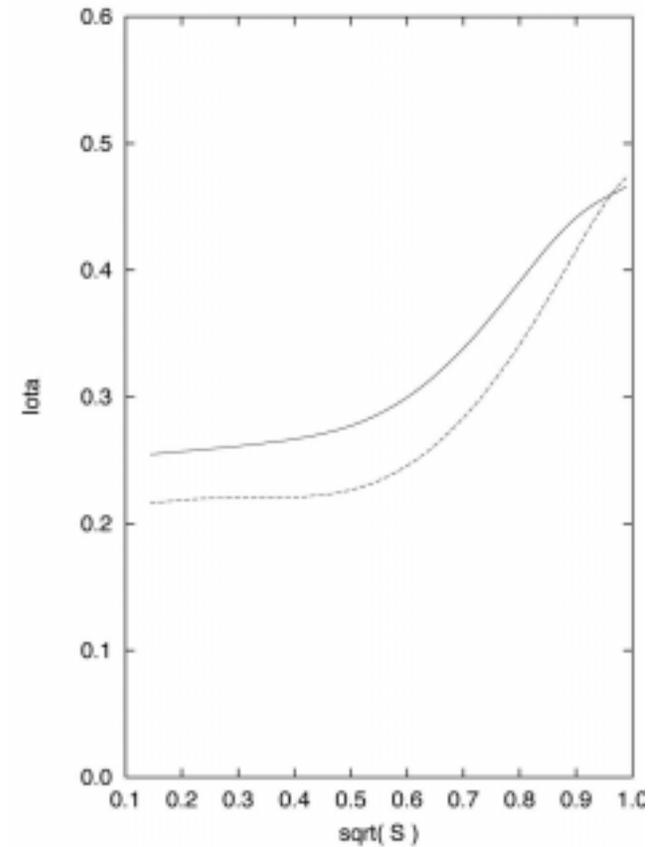
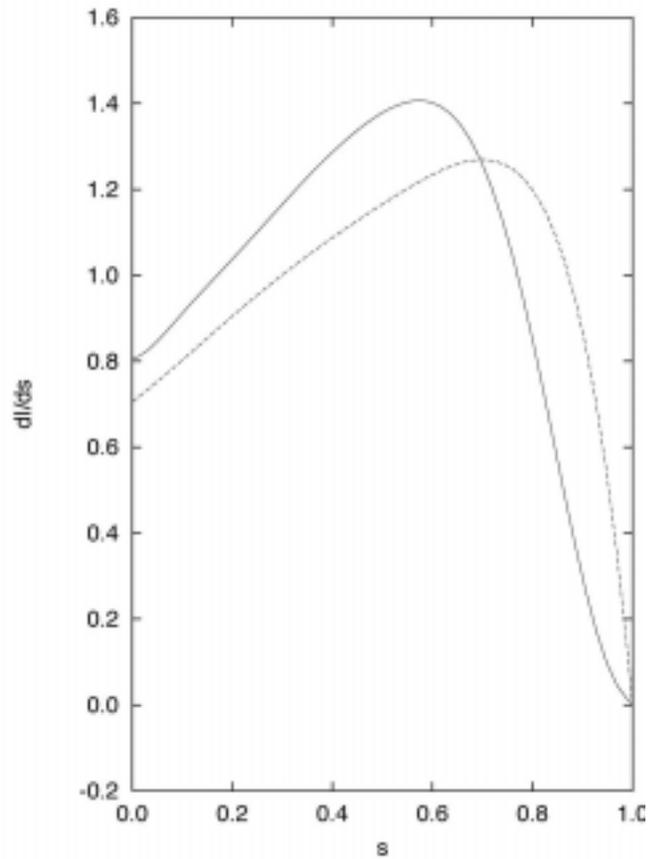
- Search for a C10-like stable configuration using a combination of higher edge shear and moderate surface corrugation has not been completely successful.
  - Iota constraint in the core would have to be relaxed.
  - Configurations with similar QAness to C10 have been obtained, but they are not yet kink stable. The growth rate is now x4 smaller than that of C10.
  - The search is continuing.

## Task 2: Alternate path -- biased current profile

A broader current profile leads to a smaller kink growth rate for C10

with reference profile:  $\lambda = 0.0014$

with broad profile:  $\lambda = 0.0003$



## Task 2: Alternate path -- biased current profile

- Work in progress:
  - For the fixed C10 boundary, find the “best” current profile.
    - Modify the optimizer to search.
  - For a broader current profile, search for a “better” configuration.
    - Not quite there yet.