

Kink Stability : QAS3_C82_d18.3.121.16

L. P. Ku

- QAS3_C82_d18.3.121.16 was found to be unstable to external kink modes (eigenvalue $\lambda^2 = 5.4 \cdot 10^{-4}$, eigenfunctions shown in Fig. 1).
- The instability may be attributable to (compared to the fixed boundary C82):
 - Reduced magnetic shear in the outer region (Fig. 2).
 - Inadequate shaping in the outboard region (Fig. 3).

Fig. 1 Radial Displacement Eigenfunctions

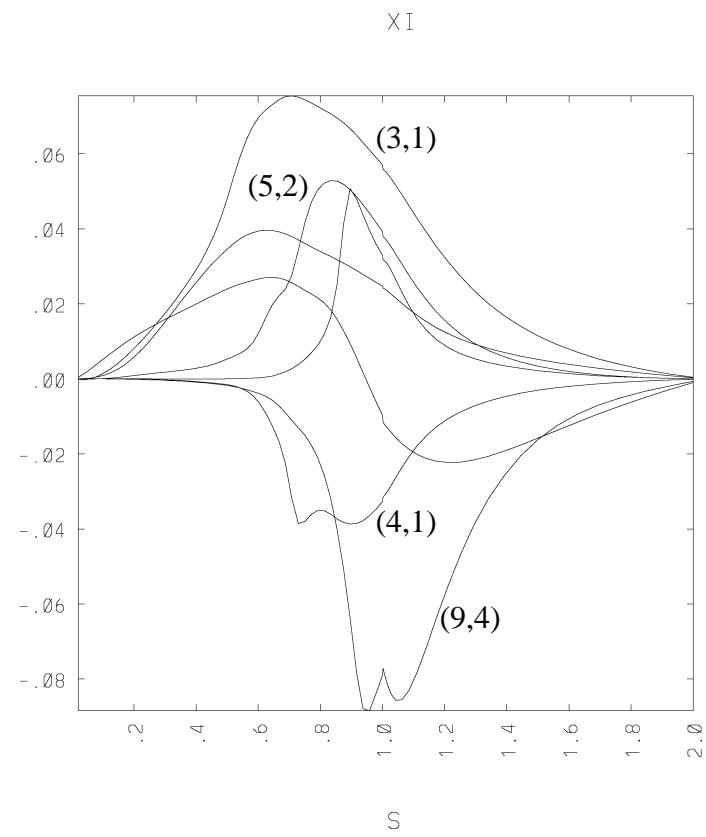


Fig. 2 Iota Profiles

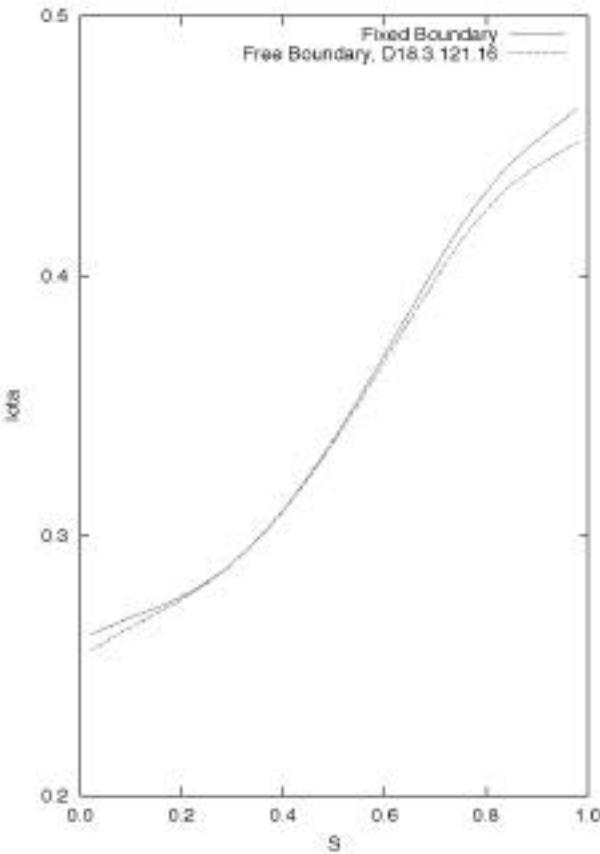
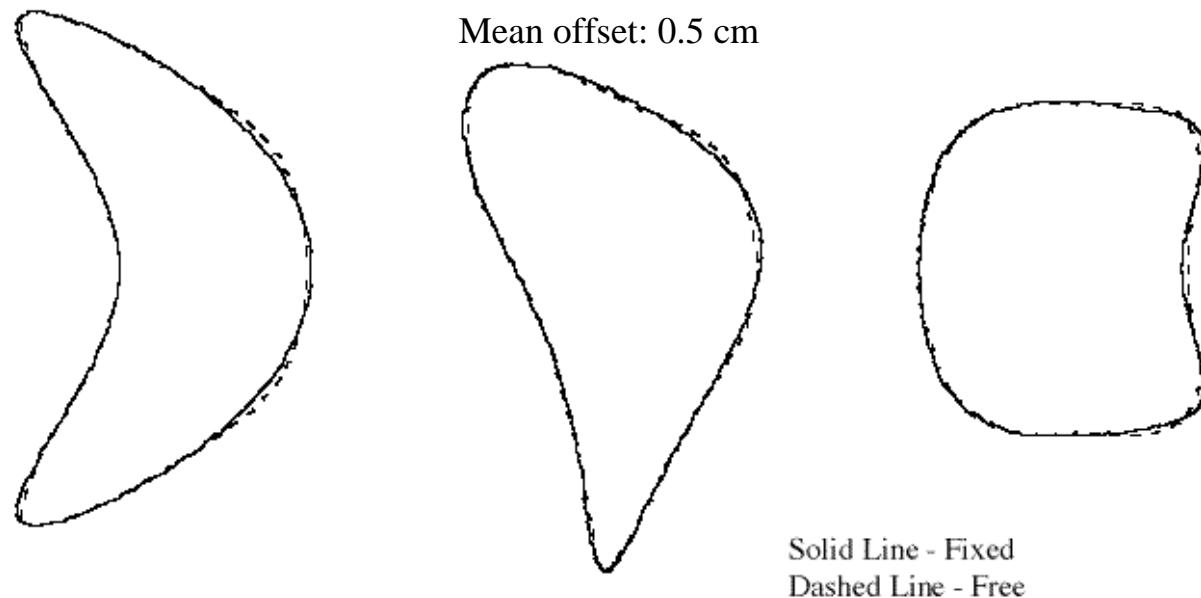


Fig. 3 Comparison of Plasma Boundary: Fixed Versus Reconstructed C82
(taken from A. Brooks Presentation on 04/23/99)

VMEC Reconstruction

Max. offset: 2.1 cm

Mean offset: 0.5 cm



Solid Line - Fixed
Dashed Line - Free