

Kink Stability Update  
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(1) Robustness of configuration c85:

It appears that the stability diagram of c85 in beta-Ip space is similar to that of c82 shown previously.

(2) Convergence studies

Systematic convergence study of kink stability has been done. We find:

(a) Previous results of shear stabilization for a four period configuration are basically correct. The increased Fourier modes only results in a small change in the critical shear.

(b) The number of Fourier modes used in the optimizer (91 modes) is adequate. For both c82 and c85, the converged growth rates are only increased by amount of  $\sim 1.0e-4$  from that of 91 modes. This increase in the growth rate is much smaller as compared to the typical growth rate of  $\sim 1.0e-3$ . Thus, both c82 and c85 are only weakly unstable and are very close to the marginal stability point. In particular, for c82, a 5% drop in pressure and current is sufficient to stabilize this weak instability.