

1. Calculate the tearing mode stability parameter Δ' for a mode with wavevector k_y in an equilibrium with a current $J_z(x)$ that consists of a pedestal of half width L , *i.e.*, the current is constant in the region $|x| < L$ and zero elsewhere and produces a magnetic field $B_{0y} = B_0 x/L$ for $|x| < L$, $B_{0y} = B_0$ for $x > L$ and $B_{0y} = -B_0$ for $x < -L$. Plot Δ' versus $k_y L$. Calculate the marginal stability point. Calculate analytically an expression for Δ' in the limit of $k_y L$ small.