Initial results from new calculations of interacting anti-parallel Euler vortices are presented with the objective of understanding the origins of singular scaling presented by Kerr (1993) and the lack thereof by Hou and Li (2006). Core profiles designed to reproduce the two results are presented, new more robust analysis is proposed, and new criteria for when calculations should be terminated are given. Most of the analysis is on a 512 x 128 x 2048 mesh, with new analysis on a just completed 1024 x 256 x 2048 used to confirm trends. The qualitative conclusions of Kerr (1993) are supported, but most of the proposed scaling laws will have to be modified. Assume enstrophy growth like $\Omega \sim (T_c - t)^{-\gamma\Omega}$ and vorticity growth like $||\omega||_\infty \sim (T_c - t)^{-\gamma}$. Present results would support $\gamma\Omega \rightarrow 1/4 - 1/2$ and $\gamma > 1$. 

When: 17 October 2007
Wednesday, 1:30pm

Where: Foothills Lab Bldg 2
Room 1001