1046-76-322 **Elizabeth Thoren*** (ethoren@math.utexas.edu), Department of Mathematics, 1 University Station C1200, Austin, TX 78712-0257. *Linear instability criteria for Euler's equation: two classes of perturbations.* Preliminary report.

One criteria for linear instability of a steady flow of an ideal incompressible fluid involves computing the essential spectral radius of the associated evolution operator for the linear perturbation about the steady equilibrium. This quantity is known to be equal to a Lyapunov type exponent associated with the equilibrium flow. In this work, the essential spectral radius of the linear evolution operator is investigated in the invariant subspace corresponding to the perturbations preserving the topology of the vortex lines and the associated factor space. (Received August 26, 2008)