1027-76-242   **V E Zakharov*** (`Zakharov@math.arizona.edu`), Department of Mathematics, 617 N. Santa Rita, Ave., University of Arizona, Tucson, AZ 85721. *Dynamics of the vortex line in presence of another vortex.*

I study the motion of the infinitely this vortex line in a velocity field created by the fixed stationary vertical thin vortex. The dynamics is described by the PDE similar to the NLSE. Actually this is a limiting case of the Euler equations. The equations have quite different properties for co-rotating and anti-rotating configurations. The simplest stationary configuration is the rotating spiral. There is a rich family of solitonic solutions on this background. The spiral could be stable or unstable. In the anti-rotating case instability leads to the collapse and the reconnection in a finite time. The collapse is self-similiar. In the co-rotating case instability leads to formation of the solitonic turbulence. As a generalization of this problem one can study a dynamics of the sheaf of almost parallel vortex lines. (Received February 28, 2007)