

## Two Scale Approach to Anisotropic Turbulence in Hel II

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The superfluid Helium is described by system of equations: Navier–Stokes and Euler equations for the macroscopic normal and superfluid velocity fields. These equations are coupled by mutual friction force, exerted on superfluid vortices by normal component. The force is proportional to the counterflow and the density of vortices. The latter being determined by the modified Vinen equation, adequate for flows with net macroscopic vorticity. The derived system is applied to the numerical analysis of formation of the shear flow between two infinite parallel material surfaces. Before the shear flow is formed, we observe the rise of anisotropic quantum turbulence. The Magnus force makes the anisotropic tangle drifts out of the region where the counterflow exists. There are three characteristic regions in the flow; of high tangle polarization in which the components are locked together, of intensive vortex generation, and of relatively dilute tangle, where the superfluid velocity is almost constant.

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