

Navier-Stokes equations and turbulence in incompressible fluids

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Contents: Lecture Program (tentative, 9/23/2001)

Lectures 1 and 2. Ideal fluids, deterministic theory.

We will present Euler equations of ideal incompressible fluids, models associated to them and discuss the blow up problem.

Lectures 3 and 4. Viscous fluids, deterministic theory. We will discuss Navier-Stokes equations.

Lecture 5. Turbulence. We will describe some of the major mathematical questions of turbulence theory.