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**Title:** Statistical solutions to evolution equations

**Abstract:** In this talk, we will present an abstract notion of statistical solutions that generalizes the concept of statistical solutions initially introduced for the three-dimensional incompressible Navier-Stokes equations to a wide range of evolution equations. The main results are the existence of statistical solutions for initial value problems and the convergence of statistical solutions of regularized problems to the statistical solutions of the original problem. We will illustrate the applicability of the theory with the very incompressible Navier-Stokes equation, a reaction-diffusion equation, a non-linear wave equation and the inviscid limit of the Navier-Stokes equations to the Euler equations in both two- and three-dimensional cases.