

Partial Differential Equations and Applied Mathematics Seminar

Title Regularity and decay properties of the incompressible Navier-Stokes equations

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Abstract

In this talk, I will consider the incompressible Navier-Stokes equations in the mild solution setting. Using this setting, I will show how to obtain analyticity of mild solutions using the Gevrey regularity technique. This regularity enables to get decay rates of weak solutions of the Navier-Stokes equations. This idea can be applied to other dissipative equations with analytic nonlinearities such as the inhomogeneous Navier-Stokes equations and the dissipative quasi-geostrophic equations.