

Regularity and Decay Estimates of Dissipative Equations

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We establish Gevrey regularity of solutions to dissipative equations. The main tools are Gevrey estimates in Sobolev spaces (using Kato-Ponce estimates in Gevrey space) and in Besov spaces (using the Littlewood-Paley decomposition). As an application, we obtain temporal decay rate of solutions for a large class of equations including the incompressible Navier-Stokes equations.