Texas Tech University. Analysis Seminars.

Gevrey classes and the Navier-Stokes equations

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ABSTRACT. We study spatially periodic functions of Gevrey classes. These functions are analytic everywhere with a uniform radius of analyticity, and their norms are stronger than all Sobolev ones. Basic estimates for solutions of the Navier-Stokes equations in Gevrey spaces will be proved. Applications to asymptotic expansions for Leray-Hopf weak solutions will be demonstrated. Strong results with simple calculations are obtained by using the celebrated Foias-Temam techniques.