Mathematics, Statistics, and Computer Science **@ UIC**

Departmental Colloquium

Fluids, walls and vanishing viscosity

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Abstract: The vanishing viscosity problem consists of understanding the limit, or limits, of solutions of the Navier–Stokes equations, with viscosity ν, as ν tends to zero. The Navier–Stokes equations are a model for real-world fluids and the parameter ν represents the ratio of friction, or resistance to shear, and inertia. Ultimately, the relevant question is whether a real-world fluid with very small viscosity can be approximated by an ideal fluid, which has no viscosity. In this talk we will be primarily concerned with the classical open problem of the vanishing viscosity limit of fluid flows in domains with boundary. We will explore the difficulty of this problem and present some known results. We conclude with a discussion of criteria for the vanishing viscosity limit to be a solution of the ideal fluid equations

Friday, September 7 at 3:00 PM in 636 SEO