

**Speaker: Thomas Schaefer (North Carolina State University)**

**Title: In Search of the Perfect Fluid**

Experiments at the Relativistic Heavy Ion Collider (RHIC) indicate that the quark gluon plasma is a very good fluid. Motivated by these results we study the question whether there is a fundamental limit to the "perfectness" of a fluid. We review arguments based on kinetic theory as well as string theory that suggest that there is lower bound for the ratio of shear viscosity to entropy density. We present an analysis of experimental results for the shear viscosity of the best quantum fluids that have been studied in the laboratory. This includes Bose fluids (such as liquid Helium), Fermi fluids (dilute atomic Fermi gases near a Feshbach resonance), and gauge theory plasmas (the QGP at RHIC).