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**Vu Hoang\***, duynguyenvu.hoang@utsa.edu. *Local Existence and Breakdown of Solutions for Relativistic Fluids with Viscosity.*

Relativistic hydrodynamics describes the motion of fluids in regimes where relativistic effects are important, including flow velocities close to the speed of light (e.g the relativistic quark-gluon plasma) and fluids interacting with strong gravitational fields (e.g. in neutron star mergers and black hole accretion disks). Relativistic fluid descriptions serve as an essential tool in high-energy nuclear physics, cosmology, and astrophysics. Several of these phenomena are not adequately modeled by perfect fluids, but require viscous fluids. Recently, the longstanding problem of treating viscosity in the framework of the relativistic fluid equations has received renewed attention. In this talk, I will discuss recent results concerning the local existence of solutions for relativistic viscous fluids with shear and the breakdown of smooth solutions. This is joint work with M. Disconzi (Vanderbilt) and M. Radosz (UTSA). (Received August 01, 2020)