



UNIVERSITY OF
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ARKANSAS™

DEPARTMENT OF MATHEMATICS MASTER THESIS DEFENSE

SPEAKER: Thomas Deatherage, Graduate Student
Department of Mathematics

Title: Nonclassical Symmetries of The Two
Dimensional Navier Stokes Equations

Date: Thursday, July 27, 2017

Time: 2:00 pm – 3:00 pm

Place: MCS 220

ABSTRACT: The two dimensional Navier-Stokes equations are used to explain the motion of viscous fluids, and their use extends to many areas from blood flow to ocean currents. The Navier-Stokes equations, however, are extremely difficult to solve due to their nonlinear nature. This thesis is an investigation into nonclassical symmetries of this nonlinear system with the hopes that these symmetries could lead to new exact solutions of the Navier-Stokes equation.