Department of Mathematics,
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Department Colloquium

Dallas Albritton

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Non-uniqueness of Leray solutions to the forced Navier-Stokes equations

Abstract:

In a seminal work, Leray demonstrated the existence of global weak solutions to the Navier-Stokes equations in three dimensions. Are Leray's solutions unique? This is a fundamental question in mathematical hydrodynamics, which we answer in the negative within the "forced" category, by exhibiting a one-parameter family of distinct Leray solutions with zero initial velocity and identical body force. This is joint work with Elia Brué and Maria Colombo.

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