



**Department of Mathematics**

**Colloquium**

**Dr. Adam Larios**

University of Nebraska - Lincoln

*Numbers in the Water: Data Assimilation in Turbulent Fluids*

**Abstract:** A major difficulty in accurately simulating turbulent flows is the problem of determining the initial state of the flow. For example, weather prediction models typically require the present state of the weather as input. However, the state of the weather is only measured at certain points, such as at the locations of weather stations or weather satellites. Data assimilation eliminates the need for complete knowledge of the initial state. It incorporates incoming data into the equations, driving the simulation to the correct solution. The objective of this talk is to discuss innovative computational and mathematical methods to test, improve, and extend a promising new class of algorithms for data assimilation in turbulent flows and related systems. We will look at how these techniques can be adapted to yield faster convergence and recover unknown parameters.

**Wednesday March 13, 2024**

**2:15 - 3:15 PM**

**L01328**

**Faculty Host: Ali Pakzad**

