

1142-76-214

Adam Larios* (alarios@unl.edu), Department of Mathematics, University of Nebraska-Lincoln, Lincoln, NE 68588-0130. *Variations on the Azouani-Olson-Titi Algorithm for Data Assimilation in PDEs.*

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 new computational and mathematical methods to test, improve, and extend a promising new class of algorithms for data assimilation in turbulent flows and related PDEs, stemming from the pioneering work of Azouani, Olson, and Titi. (Received September 04, 2018)