1162-76-219 **Animikh Biswas*** (abiswas@umbc.edu) and **Randy Price** (randyp1@umbc.edu). *Data Assimilation for the Three Dimensional Navier-Stokes Equations.*

We provide conditions, *based solely on the observed data*, for the global well-posedness, regularity and convergence of the Azouni-Olson-Titi (AOT) data assimilation algorithm for a Leray-Hopf weak solutions of the three dimensional Navier-Stokes equations (3D NSE). The aforementioned conditions on the observations, which in this case comprise either of *modal* or *volume element observations*, are automatically satisfied for solutions that are globally regular and are uniformly bounded in the H^1-norm. However, neither regularity nor uniqueness is necessary for the efficacy of the AOT algorithm. To the best of our knowledge, this is the first such rigorous analysis of the AOT data assimilation algorithm for the 3D NSE. (Received September 01, 2020)