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**Jared P Whitehead\*** ([whitehead@mathematics.byu.edu](mailto:whitehead@mathematics.byu.edu)), 275 TMCB, Brigham Young University, Provo, UT 84602. *Prepare to be assimilated: Data Assimilation between two similar, but distinct systems.*

We consider a classical data assimilation algorithm for large Prandtl number convection, but when the assimilated system satisfies the simplified infinite Prandtl number equations. Comparing numerical simulations of this scheme to a more traditional assimilation algorithm wherein the observations and assimilating model are both at either large Prandtl or infinite Prandtl numbers we see that the assimilation itself is not the restriction on the accuracy of the scheme, but rather that the ‘closeness’ of the large Prandtl number system to the infinite Prandtl system throttle the accuracy of the assimilation scheme. Implications for realistic data assimilation schemes in other settings are discussed at length. (Received August 27, 2018)