1107-76-103 **Zachary Bradshaw** and **zoran grujic*** (zg7c@virginia.edu), department of mathematics, kerchof hall, UVA, charlottesville, VA 22904. *Scaling vs. dynamics in the 3D NSE.*

Two regularity criteria for solutions to the 3D NSE residing in two supercritical spaces with *identical scaling* are presented. In order to prevent (possible) formation of singularities, the boundedness in the ambient spaces is naturally supplemented with two *dynamically opposing* conditions exhibiting the signatures of direct (physical) and inverse (non-physical) energy cascades. This illustrates limitations of the scaling considerations when studying dynamical properties of the 3D NS model. The proof is based on the effect of viscous diffusion – via the harmonic measure majorization principle – on suitable super-level sets of the Littlewood-Paley blocks of solutions corresponding to either extremely high or extremely low frequencies. (Received January 05, 2015)