1092-76-164 **Animikh Biswas**, **Michael S. Jolly**, **Vincent R. Martinez*** (vinmarti@indiana.edu) and **Edriss S. Titi**. *Smallest scale estimates for the Navier-Stokes equations.*

The radius of analyticity of the Navier-Stokes equations indicates a length scale below which viscous effects dominate the inertial ones, and in the context of 3D turbulence, it can be couched in terms of the so-called Kolmogorov length-scale, the unique length scale determined by the viscosity and energy dissipation rate alone. This talk will address a refinement of the semigroup method initiated by [Biswas-Swanson '07] for obtaining a lower bound on this radius in terms of the Gevrey norm of the initial data and forcing. This approach recovers the best-known estimate in 2D obtained by [Kukavica '98] on a significant portion of the attractor, and suggests that it can be improved. The method also applies in 3D as well, in which case the estimate made by [Doering-Titi '95] is generalized to include forcing. Consequently, their estimate of the radius in terms of the Kolmogorov length-scale can be improved on a large portion of the weak attractor. In addition to these results, the method itself is elementary and robust, being easily applicable to a wide class of dissipative equations. (Received August 07, 2013)