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Animikh Biswas* (abiswas@umbc.edu), Dept. of Math and Stat, UMBC, 1000 Hilltop Circle, Baltimore, MD 21250. *Navier-Stokes equations in a special Constantin-Chen Gevrey class*. Preliminary report.

We discuss existence time for the 3D Navier-Stokes equations (NSE) in a new functional class which belongs to the Constantin-Chen Gevrey class of functions which contains all analytic and non-analytic Gevrey classes and is a subclass of smooth functions. This class appeared recently in the work of Foias, Jolly, Yong and Zhang in the study of the attractors for the 2D NSE. We show that for the 3D case, the differential inequality that one obtains in this class is very nearly linear. This leads to an existence time which is better than the reciprocal of any power of the norm of the initial data. By way of comparison, the best known classical existence time is reciprocal of the fourth power of the H^1 norm of the initial data. This is a joint work with C. Foias. (Received January 18, 2015)