Contribution ID: **13** Type: **not specified**

Long-time asymptotic expansions for decaying solutions of Navier-Stokes equations

Monday, July 9, 2018 2:00 PM (30 minutes)

We study the large time behavior of solutions to the three-dimensional Navier-Stokes equations with periodic boundary conditions. It is shown that if the force has an asymptotic expansion, as time tends to infinity, with respect to certain families of decaying functions in Sobolev-Gevrey space, then any weak solution admits an asymptotic expansion of the same type. In particular, we establish the expansions in terms of power decaying functions and the $\log$ or $\log(\log)$ decaying ones. This is a joint work with Luan Hoang (Texas Tech University).

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