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**Luan T Hoang\***, Department of Mathematics and Statistics, Texas Tech University, Box 41042, Lubbock, TX 79409, and **Vincent R. Martinez**, Tulane University. *Asymptotic expansion for solutions of Navier-Stokes equations with a non-potential body force*. Preliminary report.

We study the long-time behavior of solutions to the three-dimensional incompressible Navier-Stokes equations with periodic boundary conditions. The body forces are non-potential and decay exponentially in time. We establish an asymptotic expansion of Foias-Saut-type for weak solutions in Gevrey classes. This extends the previous results for the case of potential forces. The proof uses the Gevrey-norm technique which makes it short and significantly simplifies the conditions on the forces. (Received September 19, 2016)