1030-35-356   **Radu Dascaliuc*** (`rdascali@indiana.edu`), Department of Mathematics, Indiana University, Bloomington, IN 47405, and **Ciprian Foias** and **Michael S Jolly**. *On the average energy and average enstrophy of the 3D turbulent flows.*

We establish that for the 3D tubulent flows modelled by the Navier-Stokes equations the average energy must be of order $O(Gr)$ while the average enstrophy of order $O(Gr^{3/2})$, where Gr is the Grashof number. As a consequence we obtain warious asymptotics (in terms of Gr) of other parameters of the flow, in particular, Raynolds number, Taylor and Kolmogorov wavenumbers. We also consider implications to the behavior of the inertial term of the Navier-Stokes equations for turbulent flows. (Received August 06, 2007)

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