

1059-78-87

Yeo-jin Chung and **Pavel M Lushnikov***, University of New Mexico, Department of Mathematics and Statistics, MSC03 2150, Albuquerque, NM 87131-1141, and **Natalia Vladimirova**. *Strong Collapse Turbulence in Nonlinear Schrödinger Equation*.

We consider a nonlinear Schrödinger equation (NLS) with dissipation and forcing in critical dimension. Without both linear and nonlinear dissipation NLS results in a finite-time singularity (collapse) for any initial conditions. Dissipation ensures collapse regularization. If dissipation is small then multiple near-singular collapses are randomly distributed in space and time forming collapse turbulence. Collapses are responsible for non-Gaussian tails in the probability distribution function of amplitude fluctuations which makes turbulence strong. Power law of non-Gaussian tails is obtained for strong NLS turbulence. (Received February 18, 2010)