1171-35-47 **Yuanyuan Feng*** (yzf58@psu.edu), State college, PA 16802, and **Anna Mazzucato**, **Michele Coti Zelati**, **Michele Dolce**, **Binbin Shi** and **Weike Wang**. *Global existence of Kuramoto-Sivashinsky equations(KSE) with dissipation enhancing flows.*

We study the Kuramoto-Sivashinsky equation in scalar form. The analysis of KSE in one space dimension is well developed. In one dimension a priori norm estimates on the solution are closed which lead to a good control on the L2 norm of the solution. In dimension d>1, there is no known global estimate for any Lp norm due to lack of maximum principle. We consider the KSE with linear advection and prove that global existence can be achieved in the presence of growing modes and for arbitrary data, if the advecting field v is relaxation enhancing with sufficiently small dissipation time. We then observe that dissipation enhancement in every direction is not necessary. Global existence in two dimension can be achieved by adding some shear flows and in three dimension can be achieved by adding some so called "planar helical flows". (Received August 06, 2021)