

1162-35-52

Anna L Mazzucato* (alm24@psu.edu). *Enhanced diffusion and global existence for the Kuramoto-Sivashinsky equation.*

We consider the Kuramoto-Sivashinsky equation (KSE) on the two-dimensional torus in scalar form. We prove global existence for small data in the absence of growing modes. If growing modes are present, we show that global existence for arbitrary data holds for the advective KSE, provided the advecting flow field induces a sufficient small diffusion time for the linearized operator, for example if the flow is mixing with large amplitude. This is joint work with Yuanyuan Feng (PSU). (Received August 20, 2020)