1162-35-113 **Adam Larios***, 203 Avery Hall, PO BOX 880130, Lincoln, NE 68588-0130, and **Kazuo Yamazaki**. *2D Kuramoto-Sivashinsky: A reduced model with comparisons to Navier-Stokes.*

The Kuramoto-Sivashinsky equation (KSE) is a highly chaotic dynamical system that arises in flame fronts, plasmas, crystal growth, and many other phenomena. Due to its lack of a maximum principle, the KSE is often studied as an analogue to the 3D Navier-Stokes equations (NSE). Much progress has been made on the 1D KSE since roughly 1984, but even for the 2D KSE, global well-posedness remains a major open question. In analogy with regularizations of the 3D NSE, we present modifications of the 2D KSE which allow for global well-posedness, while still retaiing many imporant features of the 2D KSE. However, as has been demonstrated recently by Kostianko, Titi, and Zelik, standard regularizations, that work well for Navier-Stokes, fail when applied to even the 1D KSE. Thus, we present entirely new types of modification for the 2D KSE. This talk will describe key ideas of the analysis, and also show many colorful movies of solutions. (Received August 28, 2020)