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“The Background Flow Method for the Kuramoto-Sivashinsky Equation”

The idea of the background flow method is to construct a stationary profile that exploits the linear terms of the Kuramoto-Sivashinsky equation. In contrast to the case of one spatial dimension, where because of the structure of the nonlinearity this method provides energy bounds for a large number of systems, the multidimensional case is more advanced. Here it only provides bounds under limiting conditions such as restrictions on the structure of the underlying domain and the size of the initial data.