



FIG. 1: Simulations of reaction-diffusion Eq. (8) of the main text. The core of the initial twisted scroll is straight and vertical, and periodic boundary conditions are applied in the z -direction to enforce linking number conservation. c) Restabilized scroll mean filament, for the parameters corresponding to Fig. 1 a) of the main text ($\alpha = 0.8$, $\epsilon = 0.025$, and $\beta = 0.01$), and $\tau_w = 0.45$. d) Nondimensional radius of the helix as a function of the reduced distance to the onset of sproing, for several values of β (full symbols) in a small box of height L with a single turn of helix ($\tau_w^0 = k = 2\pi/L$). The predicted straight line of slope one (dotted) is shown for comparison. Note that this linear relation holds beyond small departures from threshold since linking number conservation and restabilization of the bifurcated helix at the critical twist give $\tau_{w,k}^c = \tau_w^0/[1 + (R\tau_w^0)^2]$ without any expansion, as follows from footnote [19] of the main text with $k = \tau_w^0$. In the limit $(R\tau_w^0)^2 \ll 1$ this expression reduces to the one obtained from Eq. (13).