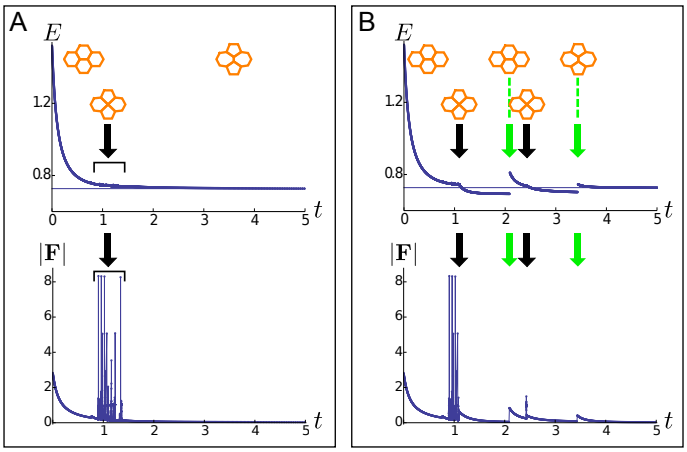

Figure S1. Example of our implementation of noise to efficiently integrate the equations of motion through the repeated formations of T1 junctions. Simulation of a uniform array of hexagonal cells, fixed at the boundaries to their equilibrium sizes where all bonds have edge tension $\sigma_{ij} = 1$ with the exception of the intercalating bond, for which $\sigma_{ij} = 3$ if the bond is formed horizontally, and $\sigma_{ij} = 1.5$ if the bond is formed vertically. The final stable configuration has a *very short* vertical bond. A. The energy E (with the energy of uniformly patterned domain subtracted out) and magnitude of concatenated force $|\mathbf{F}|$ are plotted as functions of time t when the simulation is done *without* implementation of noise for repeated T1 junctions (Movie S7). The T1 junction repeatedly forms 15 times, indicated by the black arrow and the discontinuities in $|\mathbf{F}|$, and it takes 26000 simulation steps to go from $t = 0.78$ (the time of the first T1 junction formation) to $t = 4$. The light blue line indicates the energy E_0 of the final stable configuration. B. The quantities E and $|\mathbf{F}|$ are plotted as functions of time t when the simulation is done *with* implementation of noise for repeated T1 junctions (Movie S8). Black arrows indicate the formation of repeated 4-vertices; green arrows indicate times when bond tensions are restored after $t_{\text{relax}} = 1$ had passed since the last T1 junction formation; the quantity $|\mathbf{F}|$ is discontinuous at these points. Note that it is possible to have $E < E_0$ since the tension of the bond may be temporarily artificially lowered. The T1 junction repeatedly forms 9 times in the simulation, and it takes 11000 simulation steps to of from $t = 0.78$ to $t = 4$.