



**Figure S1** 6D General separatrix surfaces and corresponding stochastic simulations. Surfaces: orange for Very High TSS; blue for Low TSS. Simulations: green for Very High TSS; purple for Low TSS. At LTSS, the dynamics spreads to all three stable fixed points equally. This is because the general separatrix surface is rotated counterclockwise closer towards the #1 stable fixed point. This allows dynamics to hop over from the stable fixed point #1 basin of attraction to the stable fixed point #2 basin of attraction. But by three-fold symmetry of the general separatrix surface, this is also the case for #2 to #3 hops, and #3 to #1 hops. In contrast, at VHTSS, the general separatrix surface is centrally located between fixed points confining the dynamics to the basin of attraction of attractive fixed point #1. Stochastic simulations are all initiated at the same location in the neighborhood of attractive fixed point #1 and use the same amount of noise ( $\Omega = 555$ ).