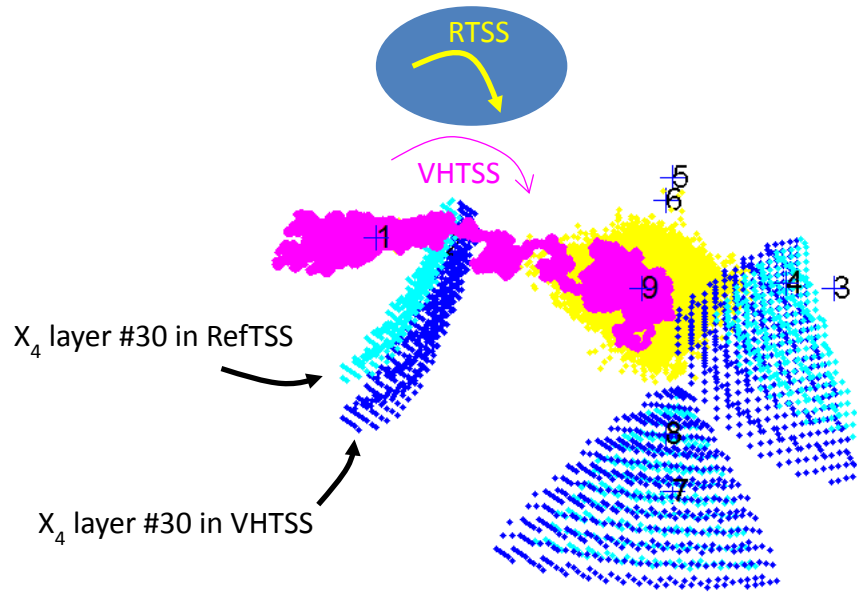
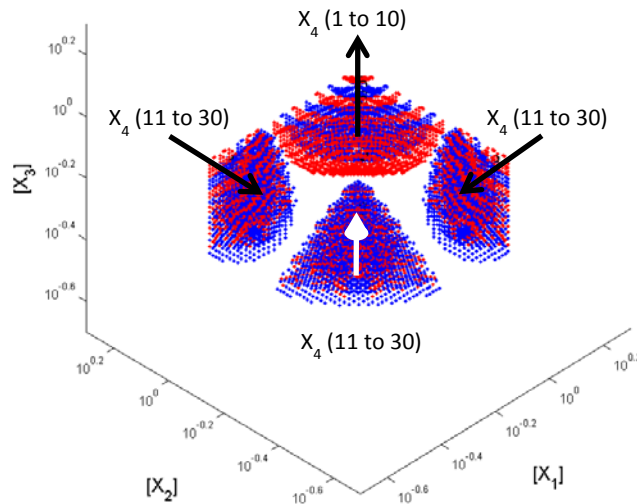


A



B



**Figure S2** A)  $[X_1]$   $[X_2]$   $[X_3]$  view showing the last  $[X_4]$  layer from two general separatrix surfaces and two associated stochastic tracks. The last  $[X_4]$  layer (#30) of the Very High TSS and Reference TSS general separatrix surfaces are shown in blue and cyan, respectively. Because the RefTSS layer is closer to stable fixed point #1 in the vicinity of which all tracks originate, the associated RefTSS stochastic track (yellow) quickly jumps to the basin of attraction of stable fixed point #9 and remains confined there. In VHTSS however, the corresponding layer is more centrally located between the two fixed points, so the associated VHTSS stochastic track (purple) originating from the same location near fixed point #1 behaves differently: it instead equally populates basins of attraction of fixed points #1 and #9. B) All  $[X_4]$  layers of the VHTSS separatrix surface on a  $30 \times 30 \times 30(x30)$  grid are shown in alternating blue and red colors. Arrows indicate the layering direction as  $[X_4]$  increases. The RTSS surface is similar, but is shifted with the layer number, as shown explicitly in panel A.