Supplement: Description of Supplementary Videos for Basins of Attraction for Chimera States

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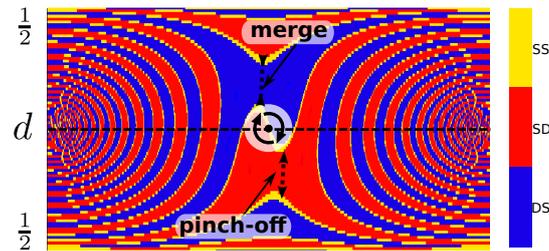
Figure 1. Supplementary Video 1: Destination maps as a function of $0.1 \leq s \leq 1$ ($A = 0.2, \beta = 0.025$). Even though $A = 0.2$ is fairly large with regards to our perturbative calculus, numerical results match the predicted motion qualitatively well. As s increases from zero, basins merge and pinch-off in an alternating fashion, so that the basin boundaries rotate counter-clockwise about R_0 ($(d, \psi) = (0, 0)$). Once s reaches $s_c \approx \sqrt{1 - A}$, this rotation stops, demonstrating that knowledge of the trajectory position in the $s = s_c$ plane is sufficient for determining the final fate of the trajectory. Download link here.
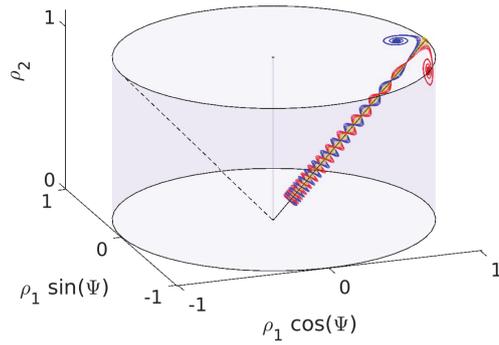
Figure 2. **Supplementary Video 2:** Twisting motion of trajectories in a double helical structure following the R_0-manifold ($A = 0.1, \beta = 0.025$). Initial conditions of 31 trajectories are equally spaced with $s = 0.1045, -0.0345 \leq d \leq 0.0345, \psi = 0$. Download link here.
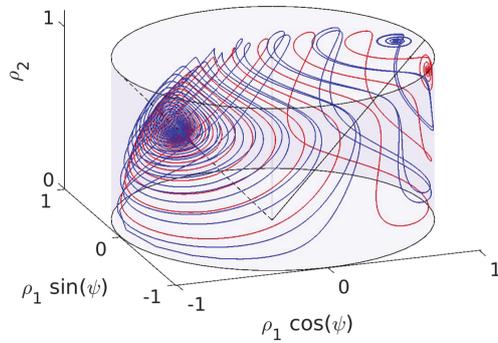
Figure 3. **Supplementary Video 3:** Twisting motion of trajectories in a double helical structure following the R_π manifold ($A = 0.1, \beta = 0.025$). Initial conditions of the 3 trajectories are $s = 0.4487, d \in \{-0.6, -0.2, 0.6\} \times 10^{-3}, \psi = \pi$. Download link here.
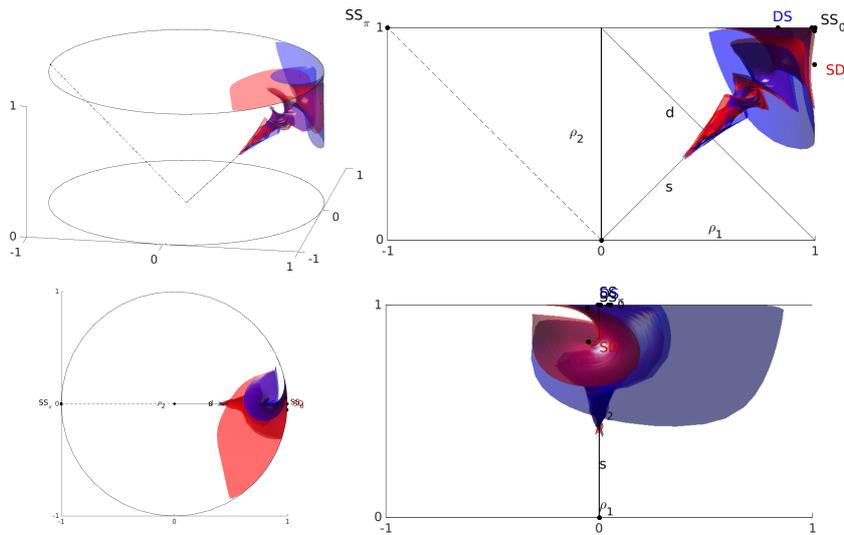
Figure 4. **Supplementary Video 4:** Three dimensional visualization of the separatrices emanating from the chimera saddle points near the R_0-manifold ($A = 0.1, \beta = 0.025$). Download link here.