

Appendix-S7. Two examples of non-oriented trajectories produced by circular auto-regression

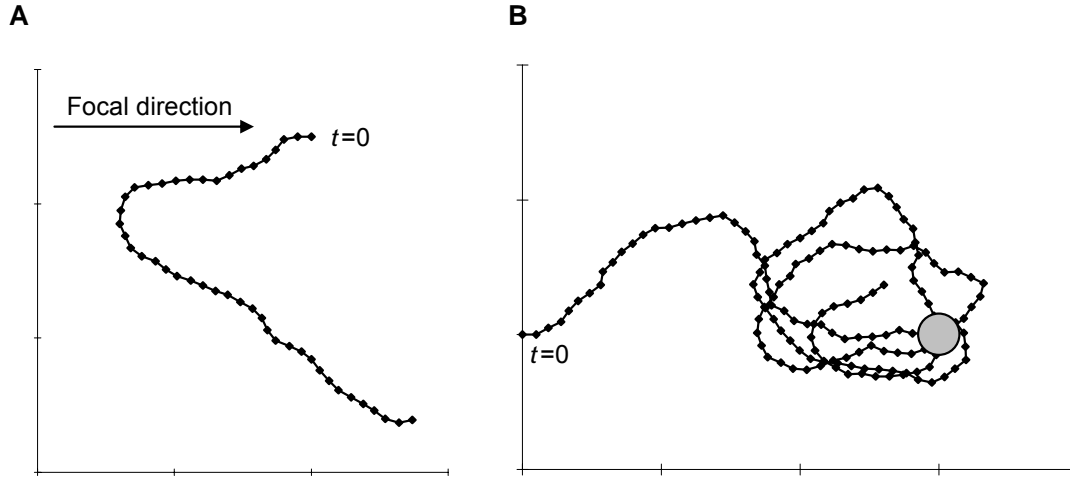


Figure S7. (A) Example of a simulated trajectory of C-AR(VM) of $\alpha = 0$, $w = 0.99$, $\kappa = 12$. Starting toward the opposite direction to α , the trajectory is gradually changing toward the focal direction α . (B) An example of a simulated trajectory of C-AR(VM) with the focal point at $(30, 0)$, $w = 0.8$, $\kappa = 6$. Starting from $(0, 0)$, the trajectory is wandering around the focal point and draws looping. The speed is fixed at 1 and the grid unit is 10 throughout.