

Movie 1: Simulation of a swimming spiroplasma. We solved (B.4-B.7,B.9) using the numerical method in **Appendix D**. The parameters for (B.8) for this run were $\kappa_0 = 3.84\mu\text{m}^{-1}$, $\alpha = 0.4$, $\gamma = 5$, $\phi = \pi/2$, $\Omega_0 = 3.0\mu\text{m}^{-1}$, and $\beta = 0.26$.

Movie 2: Simulation of a bending wave. A 2 dimensional analog of (B.4-B.7,B.9) were solved using a Crank-Nicholson routine. This provides a possible mechanism that can drive surface waves, and therefore propulsion, in *Synechococcus* and *Myxococcus xanthus*.