

Description of Additional Supplementary Files

File name- Supplementary Movie 1

File description- Pusher with an active stress of $\beta=-5$, radius $R = 3$, and a no-slip boundary condition at a Reynolds number of $Re = 0.8$.

File name- Supplementary Movie 2

File description- Pusher with an active stress of $\beta=-5$, radius $R = 3$, and a repulsive boundary condition at a Reynolds number of $Re = 0.8$.

File name- Supplementary Movie 3

File description- Pusher with an active stress of $\beta=5$, radius $R = 3$, and a no-slip boundary condition at a Reynolds number of $Re = 0.8$.

File name- Supplementary Movie 4

File description- Pusher with an active stress of $\beta=5$, radius $R = 3$, and a repulsive boundary condition at a Reynolds number of $Re = 0.8$.

File name- Supplementary Movie 5

File description- Pusher with an active stress of $\beta=0$, radius $R = 3$, and a no-slip boundary condition at a Reynolds number of $Re = 0.8$.

File name- Supplementary Movie 6

File description- Pusher with an active stress of $\beta=0$, radius $R = 3$, and a repulsive boundary condition at a Reynolds number of $Re = 0.8$.

File name- Supplementary Movie 7

File description- Pusher with an active stress of $\beta=-5$, radius $R = 3$, and a no-slip boundary condition at a Reynolds number of $Re = 0.04$.

File name- Supplementary Movie 8

File description- Pusher with an active stress of $\beta=-5$, radius $R=3$, and a repulsive boundary condition at a Reynolds number of $Re=0.04$.

File name- Supplementary Movie 9

File description- Pusher with an active stress of $\beta=5$, radius $R=3$, and a no-slip boundary condition at a Reynolds number of $Re=0.04$.

File name- Supplementary Movie 10

File description- Pusher with an active stress of $\beta=5$, radius $R=3$, and a repulsive boundary condition at a Reynolds number of $Re=0.04$.

File name- Supplementary Movie 11

File description- Pusher with an active stress of $\beta=0$, radius $R=3$, and a no-slip boundary condition at a Reynolds number of $Re=0.04$.

File name- Supplementary Movie 12

File description- Pusher with an active stress of $\beta=0$, radius $R=3$, and a repulsive boundary condition at a Reynolds number of $Re=0.04$.

File name- Supplementary Movie 13

File description- Pusher with an active stress of $\beta=5$, radius $R=6$, and a repulsive boundary condition at a Reynolds number of $Re=0.04$.