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Maneuverability at low Reynolds number[1] LISA BURTON, Massachusetts Institute of Technology, ROSS HATTON, Carnegie Mellon University, HOWIE CHOSET, Carnegie Mellon Univeristy, A.E. HOSOI, Massachusetts Institute of Technology — Speed and efficiency are common and often adequate measures to compare swimming systems. However, these metrics do not take into account how well a system can reconfigure, change direction, or move in a confined environment. Inspired by manipulability, a concept used to analyze robotic arms, we propose new metrics to consistently quantify the maneuverability of a system. We discuss a general definition of maneuverability and apply it to low Reynolds number swimming. Additionally, we identify the library of motions to maximize an artificial swimmer's maneuverability and explore the effect of morphology and kinematics on maneuverability.

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