Swimming near a deformable interface MARCELO A. DIAS, School of Engineering, Brown University, THOMAS R. POWERS, School of Engineering and Department of Physics, Brown University — It is a known fact that swimmers behave differently near deformable soft tissues than when near a rigid surface. Motivated by this class of problems, we investigate swimming microorganisms near flexible walls. We calculate the speed of a n infinitely long swimmer near an interface between two viscous fluids. Part of the calculation of the speed is the calculation of the shape of the free boundary. The swimming speed is controlled by the competition between surface and viscous effects, where two limits are observed. When the surface tension vanishes, we get Taylor's result for a swimmer with no walls. When the surface tension is infinite, the problem is like that of a swimmer near a rigid wall.

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