Brownian Swimming via Taylor Dispersion JOE GODDARD, ERIC LAUGA, University of California, San Diego — We show that the theory of generalized Taylor dispersion can be employed to analyze a model of a low-Re swimmer undergoing Brownian tumbling coupled with systematic translation along a preferred axis. The resulting formula for translational diffusivity confirms a previous analysis\(^1\) based on Langevin dynamics. This present approach may provide a useful method for treating more complex stochastic swimmers.

\(^1\)Lauga, E., PRL 106, 178101 (2011)