Swimming *C. elegans* in a wet granular medium

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(Received 17 September 2008; published online 31 December 2008)
[DOI: 10.1063/1.2996827]

*C. elegans* is a round worm that lives in wet soil and moves by undulating its body in a sinusoidal wave. We perform experiments on wild-type *C. elegans* swimming in a granular medium composed of 98 μm glass particles and aqueous fluid.

Figure 1 shows that a worm swims faster in a granular medium ($V \sim 0.46$ mm/s) than in a fluid without particles ($V \sim 0.37$ mm/s). *C. elegans* in a granular medium undulates at a lower frequency and with the same amplitude. We measured the Strouhal number ($St = fA/V$), a ratio of lateral to forward velocity, to characterize the surrogate efficiency of locomotion. Swimming motion in a granular medium, which more closely simulates its natural environment, is more efficient ($St \sim 0.5$) than swimming in a fluid ($St \sim 1.5$).

**FIG. 1.** (a) A wild-type *C. elegans* swims in a wet granular medium and (b) in a fluid.