

Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

Dynamics of *C. elegans* in various fluidic environments SUNGH-
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plied Math. Lab, Courant Institute, NYU — *C. elegans* is a freely moving soil
nematode that crawls or swims by propagating a body wave backwards. In fluids we
investigate its swimming locomotion as the fluid viscosity is varied over many orders
of magnitude and in the presence of non-Newtonian fluid responses. For Newtonian
fluids we find power-law relations between swimming speed and fluid viscosity, and
these relations are not in accordance with assumptions of constant power input to
the fluid. We also find that the Strouhal frequency is nearly independent of viscos-
ity and swimming speed. We investigate the influence of confinement on *C. elegans*
locomotion and find that interactions between confining walls and body undulations
can markedly increase swimming speed.

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Date submitted: 04 Aug 2006

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