

Abstract Submitted  
for the DFD05 Meeting of  
The American Physical Society

**A Minimalistic Approach to Swimming Through Sand** MATT BZDEGA, TRISTEN DENNEN, Emory University, STEPHAN KOEHLER, Emory University Physics Department — Inspired by microorganisms swimming at low Reynolds, we are interested in understanding how self-propelled robots can swim through sand. We find that a two-hinged swimmer can propel itself forwards and backwards through a simple sequence of cyclically repeated stroking motions. A range of parameters including paddle size, shape, and stroking angles, along with variations of the swimming strategies were investigated and the results show similarities to Purcell's two-hinged swimmer.

Stephan Koehler  
Emory University Physics Department

Date submitted: 11 Aug 2005

Electronic form version 1.4