

Abstract Submitted
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The Effects of Limb Coordination on the Swimming Efficiency of Crayfish ROBERT GUY, JIAWEI ZHANG, Department of Mathematics, University of California Davis, QINGHAI ZHANG, Department of Mathematics, University of Utah, TIMOTHY LEWIS, Department of Mathematics, University of California Davis — Limbs of crayfish, called swimmerets, move rhythmically in a metachronal wave that progresses from back to front during forward swimming. Neighboring swimmerets maintain phase-lags of about 25% over a wide range of frequencies. This “phase constancy” suggests that there may be mechanical advantages to this stroke pattern. We use the immersed-boundary method to simulate the coupled mechanics of the swimmerets and the surrounding fluid in order to explore how stroke patterns affect swimming efficiency.

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