

Abstract Submitted
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The ground effect on anguiliform swimming performance.¹

MOHSEN DAGHOOGHI, University of Houston-Clear Lake, UCHENNA OGUNKA, IMAN BORAZJANI, Texas A&M University — Sea Lampreys are found in the northern and western Atlantic Ocean along shores of Europe and North America as well as in the shores of Great Lakes and nearby rivers. This species is anadromous; from their lake or sea habitats, they migrate up rivers to spawn. In other words, they specialized to efficiently swim not only in deep but also in shallow waters. Various studies have shown that certain types of fish swim close to a solid surface to reduce thrust requirements and increase efficiency as a result of interactions between the wake and the surface in steady swimming. To access the effects of a nearby substrate on the swimming performance of sea lampreys, a numerical simulation is performed to investigate how ground effects could possibly alter flow in the narrow gap between substrate and fish and influence the swimming hydrodynamics.

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