

Abstract Submitted
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Scalar transport by planktonic swarms¹ MONICA MARTINEZ-ORTIZ, California Institute of Technology, JOHN O. DABIRI, Graduate Aeronautical Laboratories and Bioengineering, California Institute of Technology — Nutrient and energy transport in the ocean is primarily governed by the action of physical phenomena. In previous studies it has been suggested that aquatic fauna may significantly contribute to this process through the action of the induced drift mechanism. In this investigation, the role of planktonic swarms as ecosystem engineers is assessed through the analysis of scalar transport within a stratified water column. The vertical migration of *Artemia salina* is controlled via luminescent signals on the top and bottom of the column. The scalar transport of fluorescent dye is visualized and quantified through planar laser induced fluorescence (PLIF). Preliminary results show that the vertical movement of these organisms enhances scalar transport relative to control cases in which only buoyancy forces and diffusion are present.

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