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Characterization of fluid transport due to multiciliary beating SARAH LUKENS, Tulane University, XINGZHOU YANG, Mississippi State University, LISA FAUCI, Tulane University — Understanding fluid transport caused by beating cilia can give insight on biological systems such as transport of respiratory mucus, ovum transport in the oviduct, and feeding currents around unicellular organisms. Here we investigate fluid transport due to coordinated beating of motile cilia based upon a computational model that couples their internal force generating mechanisms with external fluid dynamics. Velocity field data is used to identify Lagrangian Coherent Structures (LCS) within the domain. These coherent structures give spatial information on fluid mixing and nutrient transport within this dynamic environment.

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