

Abstract Submitted
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An experimental study of flow around submerged grass vegetation JULIA LEE, SHREYAS MANDRE, RAVI SINGH, Brown University — Mixing of fluids through submerged vegetation caused by tidal currents facilitate various environmental and ecological transport processes. This fluid-vegetation interaction is believed to result from a Kelvin-Helmholtz instability from an inflection point in the flow profile. Recent studies suggest that flow in presence of grass can also become unstable due to shear instability of flow above the grass. We devise a two-dimensional lab scale analog of the fluid-vegetation interaction using ABS plastic filaments immersed in a soap film. We employ PIV of the surrounding flow to gain an understanding of the role of instabilities in the flow.

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