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Vortex formation analysis of a piston-cylinder apparatus with passively varying output inspired by jellyfish[1] ALEX VILLANUEVA, SHASHANK PRIYA, Virginia Tech — The flow analysis of a robotic jellyfish (Robojelly) has led to the observation of an increase in performance due to passive flexible margin. Flexible margin are common on animals using an oscillating mode of propulsion. The understanding of flexible margins is therefore important for a better understanding of animal propulsion and bio-inspired propulsion. This work focuses on analyzing the effects of stiffness and geometry of flexible margins. A piston-cylinder apparatus was used with flexible margin at the output to test the different flexible margin configurations. These results characterize the effects of the different flexible margin parameters on vortex circulation and size.

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