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**Measurement of mosquito wake flow using time-resolved tomographic particle image velocimetry** ZHONGWANG DOU, PAVLOS VLACHOS, Purdue University — Recent strategies on the control of mosquito-borne diseases have been largely relying on the control of mosquito population. The flight dynamics of mosquito are closely related to their mating and courtship behavior, therefore understand the fluid dynamics can play an important role in developing novel strategies for mosquito population control. In this work, for the the first time, we measure the wake flow of a single tethered mosquito using time-resolved tomographic particle image velocimetry system. Mosquitos are tethered inside a transparent box, and fog particles are used to seed the area. Four cameras, synchronized with the illumination of a Nd: YLF laser, are employed to record the flow field at a speed of 700 Hz (frame straddling mode). The 4D flow structure, pressure field, and flow statistics at the wake of the mosquito are reconstructed and reported in this study.

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