

Abstract Submitted
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Dew-driven folding of insect wings ANDREW DICKERSON, SAM BEADLES, COURTNEY CLEMENT, DAVID HU, Georgia Institute of Technology — Small insect wings fold into tacos when exposed to dewfall or fog for extended times. Such shapes are tightly held together and require great force or long evaporation times for the wings to unfold. In this experimental investigation, we use time-lapse and high-speed videography on a mosquito wing exposed to fog to characterize the folding process from a flat wing to a taco. We observe a taco is formed through a series of processes involving wing bending, unbending, and subsequent tight folding of the wing following the sliding of the drop off the wing. We use a simplified 2D model to determine the forces coalescing drops exert on the wing, and present folding-resistant design suggestions for micro-aerial vehicle wings.

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