

Article

Flow Structure and Force Generation on Flapping Wings at Low Reynolds Numbers Relevant to the Flight of Tiny Insects

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Supplementary Material

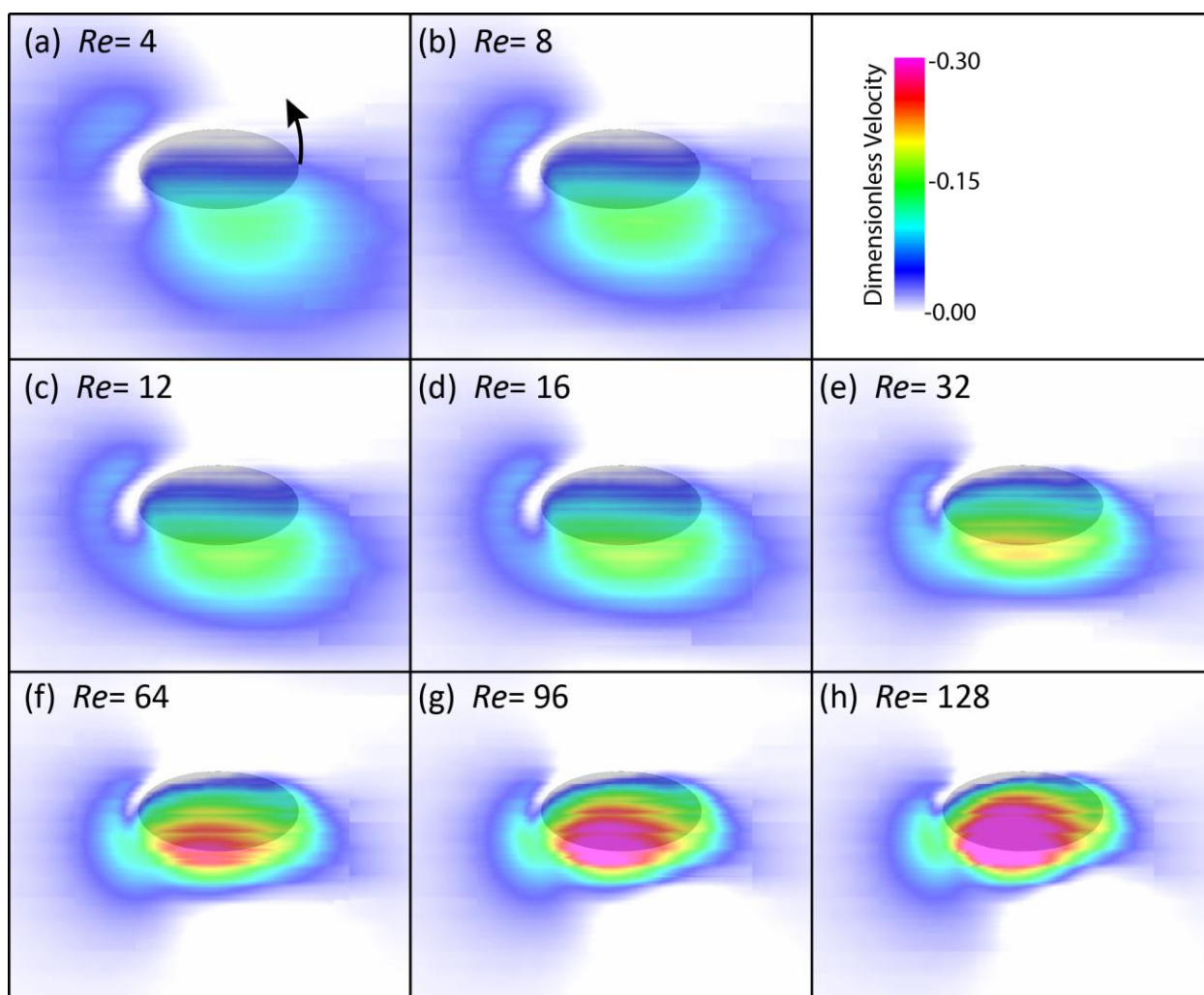


Figure S1. Spanwise flow above the wing at mid-stroke ($\text{aoa} = 45^\circ$, Re range from 4–128). The color map shows the spanwise flow through a slice parallel to the wing and $1/10$ chord length above the wing (min = 0 and max = 0.3). Note that the wing is traveling counterclockwise, indicated by the arrow in (a), about an axis of rotation to the left.

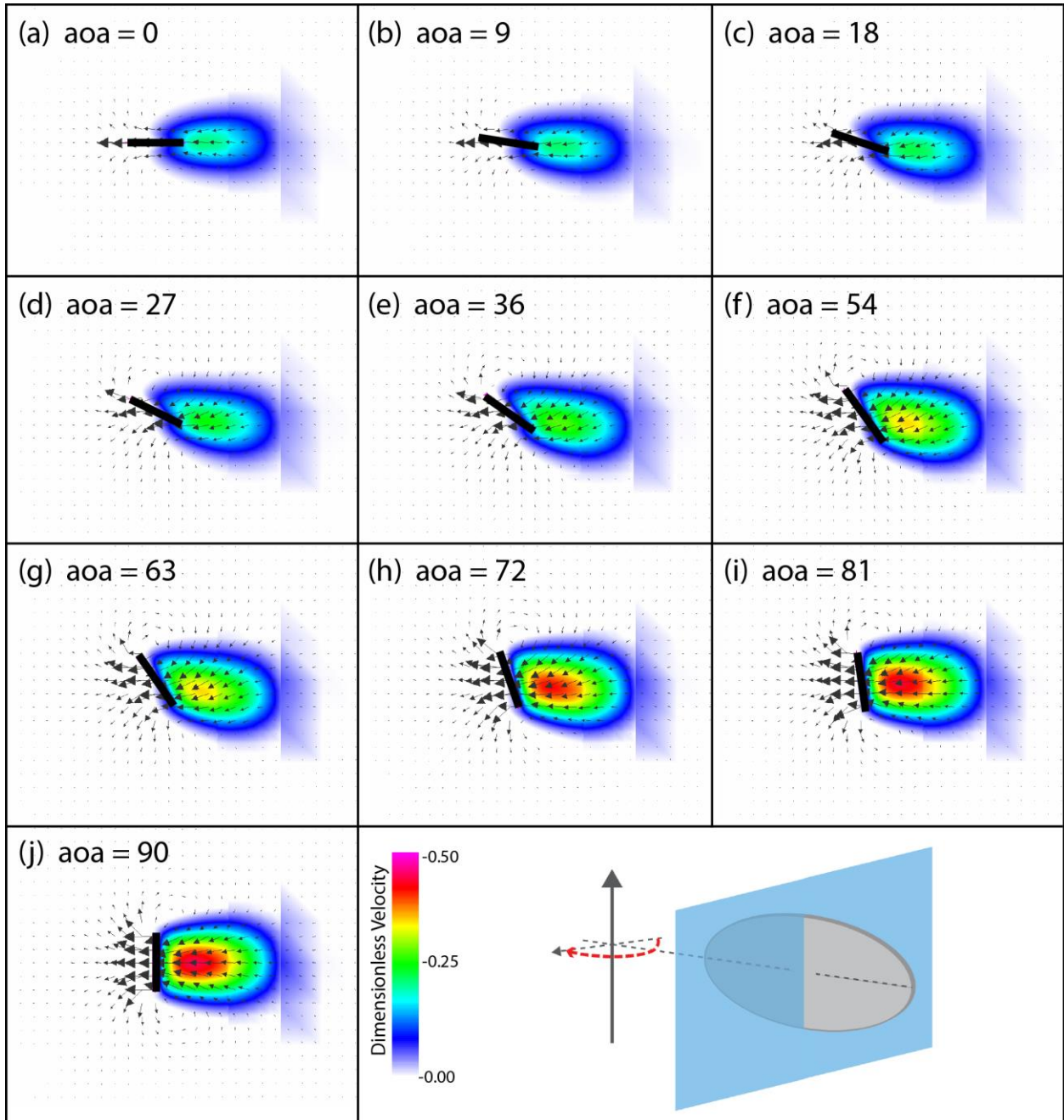


Figure S2. Vector fields and spanwise flow at mid-stroke ($Re = 32$, α range from 0° to 90°). Cross section shown is through the chord at the midpoint of the span. The vectors show the direction of flow and are scaled to the magnitude of the flow velocity. The color map shows the spanwise flow (min = 0 and max = 0.5). Note that the wing is traveling to the left.