

## Aerodynamics of manoeuvring flight in brown long-eared bats (*Plecotus auritus*)

### Supplementary information S1

This supplementary figure shows a 2D top-down view of the trajectories of the bats (represented by a point on the top of the bats' head between the ears) and prey in all 10 analysed sequences in reference to the ground (Fig S1). The sequences show approximately the trajectories from start to end of the manoeuvre. As can be seen the bats were positioned around 60 mm downstream the prey during the manoeuvre. In most cases, the bats were very stable in the streamwise direction throughout the manoeuvre, but in some cases they either approached the prey or moved away from it slightly. However, even in these less stable sequences the streamwise movement (roughly around 50mm on average) is relatively small in comparison to the air speed of 2.5 m/s. The average duration of the manoeuvre was 0.61s (as stated in the main article), so with a movement in the streamwise direction of approximately 50mm, or 0.05m, that would mean  $0.05\text{m}/0.6\text{s}=0.08\text{m/s}$  difference in air speed.

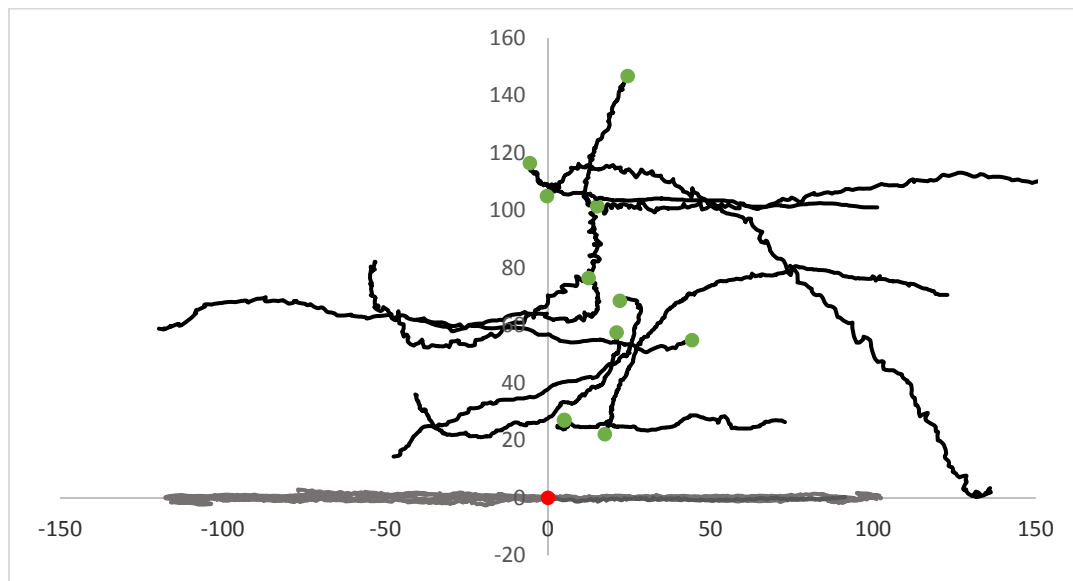


Figure S1. Top-down 2D trajectories of the bat motion (black lines) and prey motion (grey lines). Green filled circles mark the start of the bat trajectories and red filled circle marks the start of the prey motion. The start of the prey motion has been used to set the origin (0,0) of the coordinate system. Both axis are in millimetres.