APPLICATION OF FUNCTIONAL DATA ANALYSIS TO ASSESS HOW VISUAL CUES AFFECT FLIGHT SPEED IN THE HONEYBEE

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Functional data analysis allows us to analyse data where the response of interest is a continuous curve rather than a scalar or finite dimensional vector. For example in an experiment to assess the effect of optic flow on bee behaviour when landing on a vertical surface we used functional data analysis to compare the flight paths of the bees for different conditions of optic flow. Our analysis showed that the mechanisms of flight speed control in the honeybee are highly sensitive to changes in the magnitude and direction of optic flow.