

Title and abstract

Does the title clearly reflect the content of the article? Yes, No (please explain), I don't know

Does the abstract present the main findings of the study? Yes, No (please explain), I don't know

Introduction

Are the research questions/hypotheses/predictions clearly presented? Yes, No (please explain), I don't know

Does the introduction build on relevant research in the field? Yes, No (please explain), I don't know

Materials and methods

Are the methods and analyses sufficiently detailed to allow replication by other researchers? Yes, No (please explain), I don't know

Are the methods and statistical analyses appropriate and well described? Yes, No (please explain), I don't know

Results

In the case of negative results, is there a statistical power analysis (or an adequate Bayesian analysis or equivalence testing)? Yes, No (please explain), I don't know

Are the results described and interpreted correctly? Yes, No (please explain), I don't know

Discussion

Have the authors appropriately emphasized the strengths and limitations of their study/theory/methods/argument? Yes, No (please explain), I don't know

Are the conclusions adequately supported by the results (without overstating the implications of the findings)? Yes, No (please explain), I don't know

This paper assesses intra- and interspecific variability in flight properties, as well as sexual differences and the effect of mass on the flight properties of 12 beetle species using flight mills. Valuable data are presented, and the paper is worth publishing if unnecessary analyses are removed and the study's limitations are properly explained.

1. Consecutive flight patterns

The study aimed to assess: 1) intra- and interspecific variability in beetle flight, and 2) sexual differences and the effect of mass on beetle flight properties. The analyses of the consecutive flight patterns presented in Figures 6, 7, and 8 are not the main focus of this study. Moreover, Figures 7 and 8 are not effective in demonstrating the consecutive flight patterns. I believe these analyses are not essential for this study.

2. Limitations of the study

It is important to describe the limitations of the study, such as the differences between tethered and natural flight. If the authors wish to argue for the validity of this study despite these limitations, they should explain why it remains valid. See specific comments for details.

Specific comments

Figure 4

The correlation network figures are not effective in showing the correlations among variables. A correlation table would suffice for this purpose.

L465-468

The strategy helps individual beetles, not beetle species, to increase their fitness.

L549-565

I also believe that the data obtained from flight mills should be discussed carefully. Both overestimation and underestimation can occur, and this may vary by species. The discussion should conclude here, as further discussion regarding the validity of the method (Lines 560-563) is difficult without presenting a basis. Alternatively, the authors should describe other possible methods.

L595-622

The limitations of the experimental design are discussed here, particularly regarding the rearing environment. Similar to the point mentioned above, further discussion on the validity of the method (Lines 610-612) is difficult without presenting a basis. Alternatively, the authors should suggest how to address this issue in future research.

L625

The phrase "Despite experimental limitations," should be deleted for the same reason mentioned above.

L627-628

The phrase "several flight behavioural patterns" is ambiguous.