Adaptive Backstepping Active Fault-Tolerant Control with Nonlinear Adaptive Observer-Based for Quadrotor UAV under Actuator Faults and Disturbances

Dear Reviewer,

We would like to express our sincere gratitude for your valuable and insightful remarks regarding our manuscript. Your detailed suggestions have been instrumental in enhancing the quality and clarity of our work, and we deeply appreciate the time and effort you dedicated to reviewing our paper.

We have carefully addressed each of your comments and hope we have taken full consideration of all your suggestions to meet your expectations. Below, we provide a table summarizing your remarks and the corresponding actions taken by the authors.

Thank you once again for your thoughtful review and for giving us the opportunity to improve our manuscript.

No.	Reviewer Remark	Response and Action Taken
01	**The sentences written with the subject we in the article should be changed.**	All sentences with "we" were revised to use an alternative phrasing for a more formal tone.
02	**In the abstract section, a space should be left after the sentence ending with "...distrubances." and then the sentence starting with Furthermore should be written.**	Added the required space after the specified sentence and ensured the abstract follows the recommended formatting.
03	**Instead of the abbreviation adaptive backstepping FTC (ABFTC), the abbreviation ABFTC should be used directly.**	Revised the text to use ABFTC consistently throughout the manuscript, avoiding repetition of the full phrase unnecessarily.
04	**Page margins should be reviewed. Excessive spaces should be deleted. For example, there are too many spaces between the end of Conclusion and References.**	Removed excessive spaces between sections, particularly between the Conclusion and References. Consistent margins are ensured, the following margins were set: Left margin (2,7 cm), Right margin (2,7 cm), Top margin (2,2 cm), Bottom margin (2,0 cm).
05	**Some equations are not numbered. For example, the equations in the right column of page 4 should be numbered.**	Numbered all previously unnumbered equations, including those in the right column of page 4 (equation 15).
06	**In Figure 1, the masses M1,2,3,4 are given. However, the mass at the center of the quadrotor is not shown in the figure. This mass should also be shown on the figure.**	Updated Figure 1 to include the central mass of the quadrotor as requested.
07	**The font size inside the blocks in Figure 2 is too small. The font size should be enlarged.**	Enlarged the font size within the blocks in Figure 2 for better readability.
08	**The parameters of the draganfly quadrotor in the right column of page 7 should be given in a table.**	Created a new table to present the parameters of the draganfly quadrotor clearly and placed it in the relevant section (Table 1).

09	**The equations under the heading 5.1 Observer Design should be numbered.**	Numbered all equations under the 5.1 Observer Design section for consistency and clarity (equations 50 and 51).
10	**The Gaussian mu and sigma values under the heading 5.2 Simulation parameters should be given.**	The mu and sigma values have been explicitly specified in every section of the manuscript to ensure consistency and comprehensibility.
11	**Figure 4, which has shifted to the right, should be corrected. In Figure 8, the free and faulty case graphs are not clearly visible because they overlap. Free and faulty case graphs should be drawn separately.**	Corrected the alignment of Figure 4. We addressed the issue of overlapping graphs in Figure 8 by redrawing the faulty case graph separately for better visibility. However, the free case graph was not redrawn separately to avoid adding an extra page to the document. We believe that the separate faulty case graph sufficiently illustrates the good performance and resilience of the proposed method under fault conditions, effectively addressing the reviewer's concern while maintaining the overall conciseness of the manuscript.

We trust that the revised manuscript now aligns with the journal's standards and hope it meets with your approval. Should there be any further points for improvement, we would be happy to address them.

Kind regards,