Review of: "Modelling of Quadcopter for Precision Agriculture and Surveillance Purposes"

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The interesting part of this paper is the review of the state of the art in precision crop spraying with UAVs. The authors provide a thorough description of the problems and methods related to precision agriculture and the use of drones in agricultural management, along with a good review of published works in this field. Much less interesting, and worth a deep review by the authors, is the core of their paper, that is, the modeling of a quadcopter. This topic is well explored in the literature, and some innovative contribution would be expected. Instead, the mathematical model developed by the authors needs further work and some clarifications. In the following, I am pointing out some observations that could improve the scientific content of the paper, which is, in its current form, not sufficient for publication.

1. Page 8. Why use wood for the quadcopter structure? What hardware has been chosen to implement the main mission tasks (battery, endurance, flight controller, cameras, sensors, etc)? A table with the main specs of the drone would be appreciated.
2. The mathematical model is poorly developed. There are some typos (for example, in equation (I would rather say definition) (3), the capital Σ should be ξ, in definition (4), the letter “B” should be a subscript forv_x, v_y, v_z; on page 14, after Eq. (14), there is a term $w_\eta\eta$ which should be the “body frame velocity,” not the angular velocity. After Eq. (15), there is again an Eq. (14) instead of (16), and the numbering of the subsequent equations is incorrect).
3. The definitions of degrees of freedom and Euler angles (Sec. 2.2.2) are standard, and in my opinion, there is no need for an explanation.
4. Sec. 2.3. A table with the numerical values of the selected parameters (mass, moments of inertia, dimensions, etc.) should be added to the text. There is no trajectory in Figure 8.
5. Sec. 3. The meaning of Fig. 9 is not clear. Assuming that the horizontal axis is time (s), what do the plots describe? What is $\dot{z}$? Is it v_z? Why not plot v_x and v_y as well?
6. Sec. 3.2. The “real” quadrotor had serious problems (difficult lift-off, imbalance of the structure, critical stability, issues with the brushless motors, etc.). Therefore, these flaws need to be addressed and eliminated in order to validate the “modeling” of the prototype presented in the previous sections. What is the meaning of Fig. 10? It just indicates the components of the prototype. What do you mean by “calibration” of the assembled quadcopter?

In conclusion, I think that a substantial revision of the paper is more than necessary to obtain properly documented and reproducible research.