

Overall paper comments:

Paper considers a new landing vision system for UAV.

Detailed review:

26 – [1]-[3] – edition of citation format : [1-3]. Correct in whole paper.

57 – this algorithm for navigation in PX4 and Ardupilot is named L1 and is used not only for aerial vehicles, but for rovers too (ref: <https://doi.org/10.3390/s20030832>). It can be also mentioned about Ardupilot software, which I as protoplast of PX4.

Introduction: It should be mentioned about DJI commercial projects and precision landing, as a commercial solution for the problem. I'm aware that this is a commercial solution and no detailed information can be found, but I suggest to write something about that. (ie: <https://doi.org/10.15394/ijaaa.2020.1524>)

Some solutions for precise landing already offered by Ardupilot and PX4, based on the optic flow ?

Any more visual navigation systems already implemented and published (ie. for MAV Using ORB-SLAM2) ?

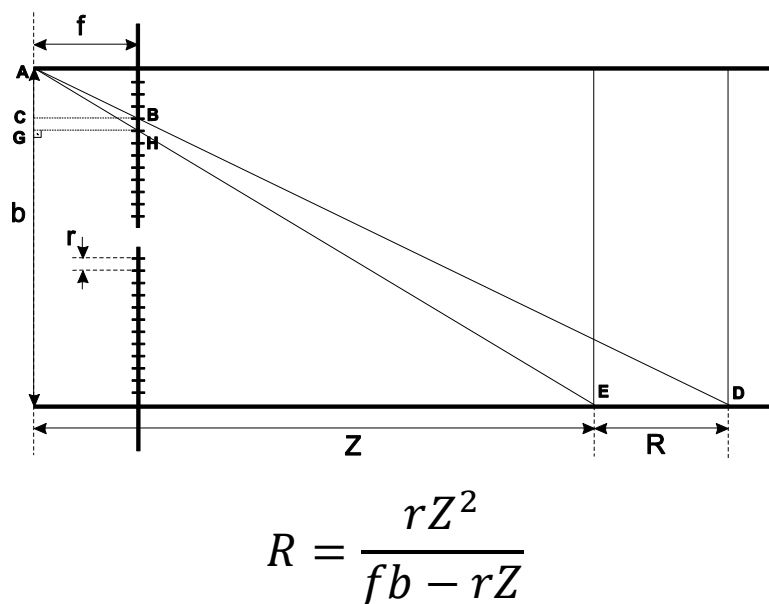
148: cx, cy aka “the principal point”

256, (17) , Figure 4 – My thoughts: Here we have a typical simulation problem. Decent speed at the first 1 s is a bit more than 12 m/s what is more than free fall. Means that engines are stopped and drone goes down at abnormal speed. Isn't it true ? Based on the Figure 4 it can be assumed. Real linear descending has also two implemented speeds. First, higher, and second, for the precise landing, just under certain defined height. So the linear descending is also not true. This is a standard PIX4 configuration for automatic landing. Based on that proposed function is not real and I would not implement it to the drone. I consider this as a serious flaw.

Figure 4 – y axis title, editorial : Altitud(e) (the same in figure 10 x axis)

250: not a quick decent will improve triangulation, but longer base (position between consequent images)

384: Yes. There is also equation on that. The distance calculated form two images is a function of resolution of the camera and distance to object and distance between two images, explanation below, can be analysed in the paper if needed. This is a suggestion for authors to investigate this phenomenon.



486: Blue line – Maby this oscilation means, that PIDs controller for the simulated UAV was overshoot and caused UAV oscillations. Mitigating PID response would diminish this phenomenon (less P, more D ?)

Problems:

How big is simulated landing pad sign. Based on the camera resolution and FOV I have serious confidence that landing pad should be quite big to recognise Haris corners or simply estimate its position. At this resolution a terrain pixel is quite big.

Conclusions:

The paper is interesting and seems to present new solution for landing, however I'm not 100 % convinced. As I understand, the solution is able to point a position and orientation of landing pad, and pass this information to the landing system. Base on that data UAV is able to land on the landing pad. It would be good to highlight in the paper following points:

- Is there any apriori knowledge about landing pad position or system is able to search landing pad and land without prior knowledge.
- There are system to indicate position of the object form the camera view. These systems are able to track and show position of the object. What is the difference. Seems to be that kind of solution, but make for landing.
- What should be a landing pad, and was is considered ?

Summary:

I suggest to make the paper more clear, what was a main idea and main solution for that. What was the problem and how it was solved. Add more relevant solution in the introduction and literature revive including commercial solution, opensource and similar systems. Major revision required.