
PRE-FLIGHT BATTERY CONSUMPTION MODEL FOR UAV MISSIONS

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ABSTRACT

This is the abstract...

Keywords First keyword · Second keyword · More

1 Introduction

While there are methods that allow a user to observe the state of charge on a given unmanned aerial vehicle's (UAV) battery in real-time, there is no accurate or efficient approach to predict the total battery consumption of planned mission.

As UAV technology improves, these devices become more and more integrated into society as they allow for tasks to be easily completed by a user in a remote location. For example, Amazon and other distribution companies are developing methods that use these devices to deliver packages to their users in a fast and simple manner. It is speculated that if UAVs are to replace delivery trucks, then not only will it cut down on cost but it will have a positive effect on the environment as well due to fewer emissions being released by these vehicles compared to standard trucks (*MIGHT NEED TO BACK THIS UP, I'M JUST HYPING UP THE DRONES*). However, UAVs are not exclusive to corporate delivery systems, they can also be used for sport surveillance purposes and police work in situations where it might not be safe to send a human being in an area; an example being a bomb threat. Therefore, by knowing the predicted battery consumption, the user is at a much greater advantage as they can determine whether a mission is feasible or if the UAV will require a battery change.

Since drones are relatively new, not much research has been done with them and their batteries. It is because of this lack of literature, that many have had such difficulty creating a functional model capable of predicting the battery consumption. Coupled with this are assumptions made in the previous attempts which make it difficult to pinpoint what exactly went wrong, and how to go about improving it. An example of this can be in [8662581] written by AUTHORS in which they assumed total battery energy consumption is constant from flight-to-flight, however, through various flights, it was found to be variable.

2 Related Work

Blah blah blah blah
blah blah

3 Background

Background Info

See Section 3.

3.1 Previous Research

Previous research

Equation Example:

$$\xi_{ij}(t) = P(x_t = i, x_{t+1} = j | y, v, w; \theta) = \frac{\alpha_i(t) a_{ij}^{w_t} \beta_j(t+1) b_j^{v_{t+1}}(y_{t+1})}{\sum_{i=1}^N \sum_{j=1}^N \alpha_i(t) a_{ij}^{w_t} \beta_j(t+1) b_j^{v_{t+1}}(y_{t+1})} \quad (1)$$

Paragraph The Mentioned paragraph continues onto multiple lines it is a paragraph after all. What else do I write? I don't know

4 Methods

When you have a paragraph you can also cite it. [8662581] and see [inbook].

And for a URL, the documentation for natbib may be found at

<http://mirrors.ctan.org/macros/latex/contrib/natbib/natnotes.pdf>

Of note is the command `\citet`, which produces citations appropriate for use in inline text. For example,

```
\citet{hasselmo} investigated\dots
```

produces

Hasselmo, et al. (1995) investigated...

<https://www.ctan.org/pkg/booktabs>

4.1 Figures

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4.2 Tables

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4.3 Lists

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¹Sample of the first footnote.

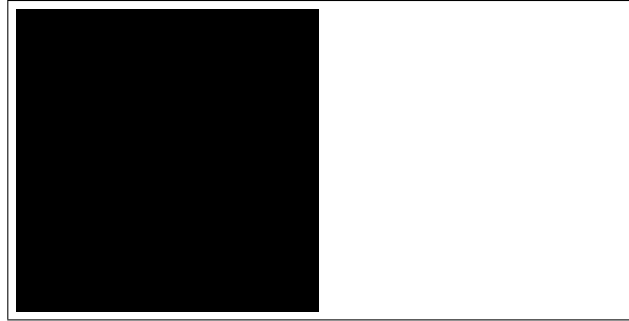


Figure 1: Sample figure caption.

Table 1: Sample table title

Part		
Name	Description	Size (μm)
Dendrite	Input terminal	~ 100
Axon	Output terminal	~ 10
Soma	Cell body	up to 10^6

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