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# 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 UAV missions.

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; such as a bomb threat.

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.

## 2 Background

Background Info

See Section 2.

### 2.1 Previous Research

Previous research

Equation Example:

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

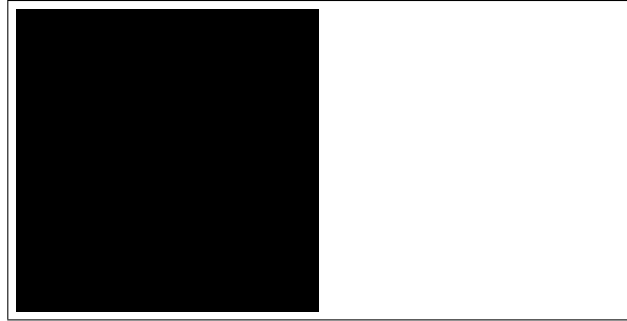


Figure 1: Sample figure caption.

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

### 3 Methods

When you have a paragraph you can also cite it. [1, 2] and see [3].

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
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produces

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

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

#### 3.1 Figures

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#### 3.2 Tables

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#### 3.3 Lists

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<sup>1</sup>Sample of the first footnote.

Table 1: Sample table title

Part		
Name	Description	Size ( $\mu\text{m}$ )
Dendrite	Input terminal	$\sim 100$
Axon	Output terminal	$\sim 10$
Soma	Cell body	up to $10^6$

- consectetur adipiscing elit.
- Aliquam dignissim blandit est, in dictum tortor gravida eget. In ac rutrum magna.

## References

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- [3] Guy Hadash, Einat Kermany, Boaz Carmeli, Ofer Lavi, George Kour, and Alon Jacovi. Estimate and replace: A novel approach to integrating deep neural networks with existing applications. *arXiv preprint arXiv:1804.09028*, 2018.