A Novel Neuromuscular Sensing Platform for Intuitive Control of Robotic Exoskeletons in Extravehicular Activities

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1 Hypothesis

Powered exoskeletons can improve astronaut EVA safety and reduce long term health risks. Incorporating neuromuscular signals in the control of exoskeletons can help them be more responsive to user needs.

2 Progress of Proposed Work

In 2021, I proposed a novel EVA-suit compatible passive wearable device to detect and characterize astronaut biosignals including neuromuscular fatigue. In my proposal, I provided a timeline for this project, which stated that the Design and Construction of this device should be completed before August 2022. Further, this device should be

3 Background

4 Previous Solutions

5 Proposed Research

6 Research Plan

6.1 Year 1: Design and Construction

6.2 Year 2: Validation

6.3 Year 3: Optimization

7 Institutional Support

8 Conclusion