Toward the detection of UHE neutrinos with the Cherenkov Telescope on EUSO-SPB2

Eliza Gazda, on behalf of the JEM-EUSO SPB2 Collaboration

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Sources of Cosmic Rays are unknown

Acceleration mechanisms of ultra-high energy particles are unknown

We have a chance to explore “beyond standard model” particle physics, exploring events like ANITAs

First search of Ultra High Energy neutrinos from near-orbit altitude with the Air Shower Imaging Cherenkov Technique!
The Earth Skimming Technique

Test signal measured in a dark box, lab environment, based on current camera electronics.

Bifocal optical design, lowers the threshold of accidental triggers.
The Cherenkov Telescope

- Camera
- Camara Shelf
- Cherenkov Telescope
- Read-out Electronics, Power
- Gondola
Looking forward

• Incorporating and field testing the telescope in Colorado
• Data reconstruction based on simulations and methods for photon background and data analysis
• Preparations for the EUSO-SPB2 flight form Wanaka, New Zealand in 2023
• Providing background data and initial observations for future missions like Probe of Extreme Multi-Messenger Astrophysics (POEMMA)