Contribution ID: 133

Type: Parallel talk

## Search for fast magnetic monopole with NOvA Far Detector

Wednesday 16 October 2024 15:15 (15 minutes)

The search for magnetic monopoles has intrigued physicists for centuries. The NOvA Far Detector (FD), primarily used for studying neutrino oscillations, possesses a unique potential to search for exotic subluminal particles such as magnetic monopoles. With its extensive surface area of over 4,000 m<sup>2</sup>, its location near the earth's surface, and minimal overburden, the 14 kt FD is highly sensitive to a broad range of magnetic monopole masses and velocities. We have developed a novel data-driven trigger that continuously monitors the data stream, which is predominantly composed of 150 kHz of cosmic rays, for signals resembling a magnetic monopole. This ensures that any monopole crossing the detector is recorded for further analysis. In this presentation, I will share the preliminary results of the NOvA fast magnetic monopole search, highlighting our novel approach and its effectiveness.

## Track type

Astroparticle Physics

Author: PANDA, Lipsarani

**Presenter:** PANDA, Lipsarani

Session Classification: Parallel - ASP & GW