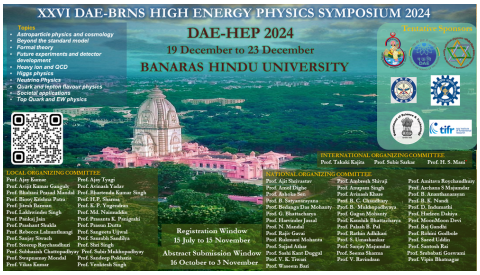

Contribution ID: **368** Type: **Oral**

Studies of Astrophysical Phenomena with the NOvA Experiment

The NOvA experiment, primarily designed to study neutrino oscillations, has also proven to be a valuable tool for investigating various astrophysical phenomena. With its near detector situated 100 meters underground at Fermilab and its far detector, spanning 4,000 m^2 at Ash River, NOvA offers unique capabilities for probing astrophysical properties. This talk presents an overview of recent studies utilizing NOvA's detectors to explore cosmic muon rate variations, search for dark matter and magnetic monopoles, and detect atmospheric neutrinos. Additionally, the combination of NOvA's near and far detectors enables it to serve as a powerful supernova neutrino flux detector and facilitates the search for multi-messenger signals associated with LIGO/Virgo gravitational wave events.

Field of contribution

Experiment

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Track Classification: Astroparticle physics and cosmology