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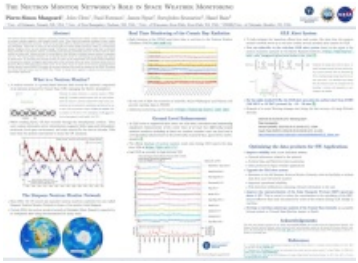
Poster
The Neutron Monitor Network is integral in monitoring Ground-Level Enhancements (GLEs), sudden increases in cosmic ray intensity typically triggered by solar energetic particle events. These events pose significant challenges to space weather forecasting and infrastructure protection.
GLEs can have profound effects on infrastructure, particularly in space-based systems and technologies. High levels of cosmic ray flux during GLEs can disrupt satellite operations, leading to communication glitches, navigation errors, and even hardware damage. Furthermore, increased radiation exposure poses risks to astronauts during spacewalks or long-duration missions, necessitating careful planning and shielding measures.
On Earth, GLEs can affect aviation and power grids. Airlines may need to reroute flights to lower altitudes to minimize radiation exposure to passengers and crew.
The Neutron Monitor Network's role in detecting GLEs is critical for understanding and mitigating their impacts on infrastructure. By providing early warnings and data on cosmic ray flux enhancements, the network enables stakeholders to take proactive measures to safeguard space-based assets, ensure astronaut safety, and protect terrestrial systems from the disruptive effects of GLE-induced space weather events.
In this poster, we give an update on the American operating Simpson Neutron Monitor Network (SNMN). We present the real-time monitoring of the cosmic ray radiation by the SNMN. We present the current GLE alert system based on SNMN data. Finally, we discuss future upgrades to optimize the data products for space weather applications.

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