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Magnetic monopole search experiment using magnetometer and plastic scintillator

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Whether the magnetic monopole (MM) exists is a long-standing question in particle physics. It is postulated to be crucially related to the quantization of the electric charge. Under the framework of the Grand Unified Theory (GUT), a certain amount of MMs are produced during the splitting between strong and electroweak forces, which occurred very shortly after the big bang. Past efforts were focused on searching for such GUT-MMs using super-conducting coils and large low-background detectors, which demand ultra-low temperatures and an underground environment, respectively. In this talk, I will introduce a new experiment that searches for coincidental signals of MMs in a high-precision magnetometer and plastic scintillators.

Submitted on behalf of a Collaboration?

Yes

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