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Subluminal Magnetic Monopole Search with NOνA MARTIN J. FRANK, University of South Alabama, NOVA COLLABORATION — The existence of the magnetic monopole has eluded physicists for centuries. The NOνA far detector (FD), used for neutrino oscillation searches, has the additional capability to search for magnetic monopoles at subluminal velocities. With a surface area of over 4,000 m^2 and a location near the earth's surface, the 14 kT FD provides us with the unique opportunity to explore an area of magnetic monopole phase space previously inaccessible to underground experiments. We have designed a novel data-driven triggering scheme that continuously searches the FD's live data for monopole-like structures. At the offline level, the largest challenge in reconstructing monopoles is to reduce the 148,000 Hz speed-of-light cosmic ray background. In this talk, I will present the trigger algorithm that we employ and the offline reconstruction algorithm that will be used for the first NOνA monopole search.

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