Abstract Submitted
for the APR14 Meeting of
The American Physical Society

An OPERA-3D Model of Muon Injection in the Muon $g-2$ Storage Ring LIA VALLINA, Illinois Mathematics and Science Academy — The muon $g-2$ experiment at Fermilab will measure the anomalous magnetic moment of the muon to 140 parts-per-billion. The modern experimental technique utilizes a superconducting storage ring to produce an extremely uniform magnetic field. Since the experimental systematic uncertainties scales with the non-uniformity of the magnetic field, care must be taken to minimize distortions to the field. The injection point of the muon beam into the storage ring requires special attention. In this talk, the experimental concept and the use of a superconducting inflector magnet at the injection point will be outlined. Our efforts to model this critical region in the electromagnetic simulation software, OPERA, will be described.

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Date submitted: 10 Jan 2014 Electronic form version 1.4