

Investigating a Purported Connection Between DNO and Mass

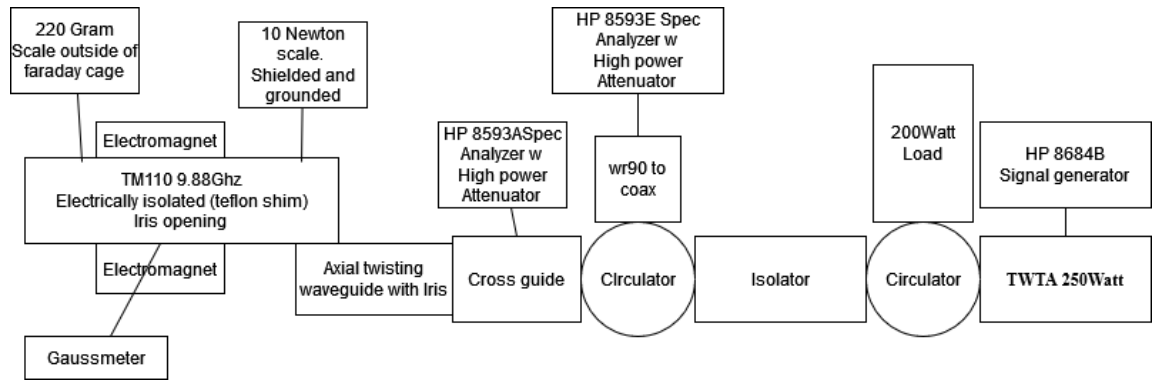
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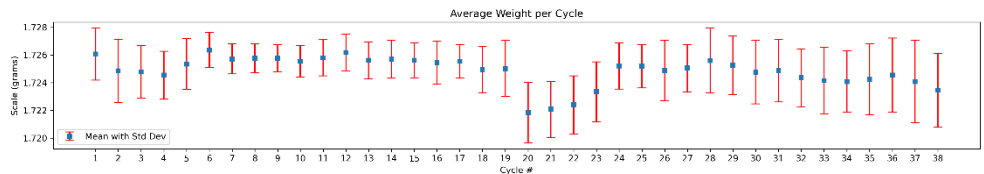
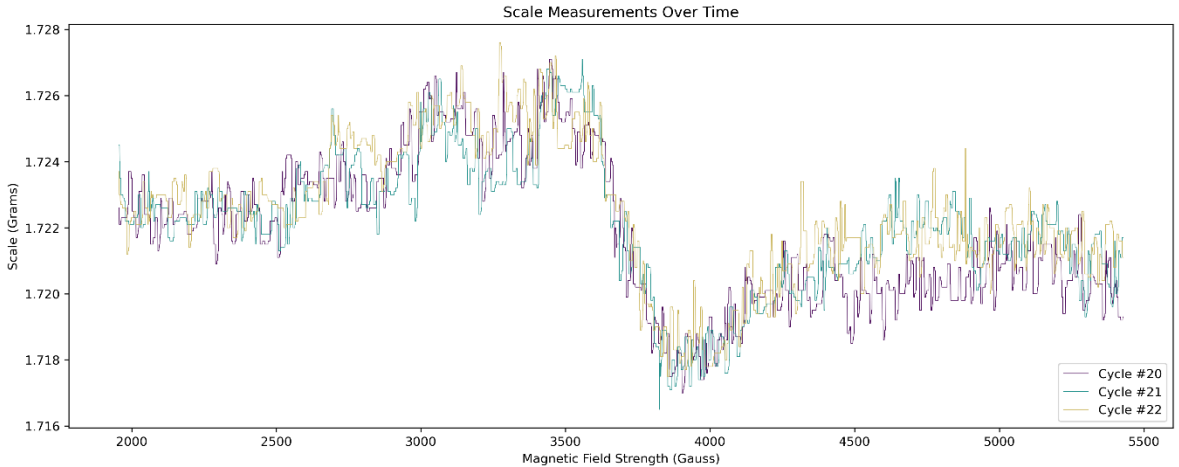
Background: In 1981, Fredrick Alzofon published a paper "Anti-Gravity with Present Technology" which outlines a theoretical connection between Dynamic Nuclear Orientation (DNO) and mass [1,2]. His patent was allegedly denied for national security reasons.

Theoretical Basis: While the full origins of mass are not well understood, matter obtains most of its mass from the nuclei, largely due to the virtual gluon binding energy between quarks. The quarks and electrons obtain their mass from the Higgs field, but this is a small fraction of the total mass. Zitterbewegung stipulates that rapid oscillatory motion of massless particles can effectively lead to mass. Dynamic Nuclear Orientation allows us to minimize nuclear entropy, which may enable the reduction of this component of the apparent mass. Minimal coupling of fermions in curved spacetime requires gravitational torsion sourced by spin density, which rotates the momentum from the velocity in zitterbewegung. Spin-spin interactions in matter can be mediated by gravitational torsion. These effects are typically overlooked because they are negligible at planetary scales.

Replication: A 1.72 gram sample with 98% Aluminum and 2% Iron 5 micron powders encapsulated in epoxy was inserted into a TM110 9.88Ghz resonant chamber in a magnetic field. LabView was utilized to monitor outputs and control magnetic field sweeps. The setup ran 41 cycles from 2000-5500 gauss over the course of 8 hours. The TWTA had gone into helix overcurrent protection mode on cycles 39-41 giving us a control on our data set.



Discussion: Runs 20-22 resembled EPR measurements around 3500-4500 gauss just by measuring the sample weight. This "Alzofon effect" of apparent weight loss during DNO may be expected to occur at about 3525 gauss based on EPR data for aluminum and free electron Larmor precession [2]. Other runs that did not have this apparent EPR signal mostly had higher average weights with about 1 standard deviation of separation. Standard EPR equipment is not typically optimized for this sort of measurement, and the equipment may not have been operating properly during other parts of the run. More work is needed to resolve a better SNR with these experiments, but the initial data looks promising.



[1] F. Alzofon, "Anti-Gravity with Present Technology", AIAA Joint Propulsion Conference, (1981).

[2] C. D. Jeffries, "Dynamic Nuclear Orientation", John Wiley & Sons, (1963)