

## Re: Crank Magnet

**Source:** <http://sci.tech-archive.net/Archive/sci.chem/2004-12/1381.html>

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**From:** Uncle Al (*UncleAl0\_at\_hate.spam.net*)

**Date:** 12/24/04

Date: Thu, 23 Dec 2004 18:01:57 -0800

David McAnally wrote:

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> *Uncle Al <UncleAl0@hate.spam.net> writes:*  
>  
> *>No self-consistent mathematical construct can be internally falsified,*  
> *>Euclid or Einstein. Euclid fell when his Fifth (Parallel) Postulate*  
> *>fell – Riemann, and Bolyai and Lobechevsky; then Thurston to do them*  
> *>all,*  
>  
> *I saw one person describe the work of Bolyai and Lobachevsky as a*  
> *vindication of Euclid, on the basis that Euclid was aware enough to make*  
> *his Fifth Postulate a Postulate, and not attempt to make it a Proposition.*  
> *In other words, it vindicated Euclid because he never attempted to prove*  
> *it, but chose, instead, to assume it.*

The number of parallel lines through a point not on a given line is not provable.

Euclid, of course, contains no errors. Euclid avoided using this Fifth Postulate whenever possible because he distrusted it. Euclidean geometry is merely incomplete – a special case of geometry in zero curvature. Add hyperbolic (negative curvature; Riemann) and elliptic (positive curvature; Bolyai and Lobechevsky) geometries and we're home, right? Nope! Thurston identifies eight fundamental simply-connected geometric 3-manifolds with compact quotients:  $E^3$ ,  $S^3$ ,  $H^3$ ,  $S^2 \times R$ ,  $H^2 \times R$ ,  $SL_2$ , Nil, and Sol.

SR tacitly assumes  $G=0$  and  $h=0$ .

GR tacitly assumes  $h=0$ .

QM tacitly assumes  $G=0$  and  $c=\text{infinity}$ .

These are satisfactory approximations in their own balliwicks. Things get sloppy at interfaces (e.g. Planck distances). There is no physical theory that allows  $G=G$ ,  $c=c$ , and  $h=h$  simultaneously.

M-theory is utterly unproductive. Lattice quantum gravitation cannot reproduce GR. GR cannot be quantized. Stochastic electrodynamics cannot produce a Schroedinger equation to describe the hydrogen atom.

But wait! It's worse than that!

Even-parity metric gravitation with geodesic paths is exactly duplicated – every prediction down to the last decimal place – by odd-parity affine gravitation with autoparallel paths. Well shit howdy, they can't both be correct!  $(x,y,z) \leftrightarrow (-x,-y,-z)$  either makes a difference (pseudotensors) or it does not (tensors). Newton, Einstein, lattice quantum gravitation, and 3/5 of M theory are parity-even. Anybody who identifies two test masses that reproducibly fall differently in vacuum falsifies the Equivalence Principle and all theory that postulates it – all even-parity physical theory.

Given that symmetries must be coupled to conserved properties via Noether's theorem, we have a short mathematical menu of possibilities,

<http://www.mazepath.com/uncleal/eotvos.htm#b21>

Properties coupled to internal symmetries cannot couple to rotation or translation by definition. Now the list of test possibilities is very short,

Invariance Conserved Quantity

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Proper translation in time energy  
orthochronous (homogeneity)  
Lorentz translation in space linear momentum  
symmetry (homogeneity)  
    rotation in space angular momentum  
    (isotropy)

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Discrete P, coordinates' spatial parity  
symmetry inversion  
    C, charge charge parity  
    conjugation  
    T, time reversal time parity

Chemical composition is demonstrated inert to one part in ten trillion difference/average. Spinning and electromagnetically polarized (magnets) test masses empirically validate the EP. Charge conjugation is an internal symmetry. Unless you have a time machine, the only untested property is spatial parity.

Curiously, parity is the only non-Noetherian symmetry-property couple. Geometric parity divergence could not be ab initio calculated until 1999. It makes perfect sense to challenge spacetime geometry with test mass geometry. Convincing a physics research group to invest funds and risk reputation on such parity experiments is rather difficult. It is a very heterodox idea, though not contradicted by any preceding observation in any venue.

A group in PR China is serially running the two hemiparity Eotvos experiments (left- or right-handed single crystal quartz against amorphous fused silica) and the full parity experiment (left- vs. right-handed single crystal quartz). The first hemiparity experiment is running as you read this. The full parity Eotvos experiment is expected to kick off in January 2005. Then, we will know.

A US group also pledged collaboration "within two years." In fact, they have the sweeter test mass configuration. Unless they have been very diligent without telling me,

1) They will be lauded for having held back in what was obviously an ill-conceived quixotic proposal, or

2) They can independently confirm the empirical falsification of General Relativity (quantum mechanics also goes – no more Lorentz invariance). Coming in second will not get them a lutafisk winter holiday.

If any academic, government, or private research group wants to join the fun before the ballot box is opened, there is a calorimetric version and a parity Eotvos experiment using relaxed constraints on test mass lattice geometry. Both of them are calculated for quantitative parity divergence. The calorimetric experiment could be an undergrad summer project. The less constrained parity Eotvos experiment requires a validated Eotvos balance in place. The Indian TATA Institute could pull it off, ditto Wei-Tou Ni in Taiwan. Riley Newman at UCI is uninterested.

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Uncle Al

<http://www.mazepath.com/uncleal/>

(Toxic URL! Unsafe for children and most mammals)

<http://www.mazepath.com/uncleal/qz.pdf>