

COMMENTS ON DR. NI'S TALK ON

HUGHES-DREVER EXPERIMENT

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Dr. Ni's admirable talk on Hughes-Drever experiment implies that, assuming the analysis applied is valid, the kinetic metric effect on mass anisotropy would always be cancelled by a corresponding term arising from a change in the potential energy due to curved space. According to this argument the mass anisotropy is essentially unobservable at least in the lowest order and all theories of gravity would predict a null effect to that order.

With all due respect to this interesting conclusion we present a different point of view in which such a cancellation does not necessarily take place. In a 1977 note published in *Nuovo Cimento Letters* (Volume 20, p.681) it is stated that in the case of a λ -dependent extension of general relativity (reducing to it for $\lambda = 0$) exact solutions for static point charge is found and potential energy is not altered in the lowest order necessary for a cancellation. However, Dr. Ni does not feel this conclusion is necessarily valid.

It is a happy occasion that we have here a disagreement on the important problem of the interpretation of Hughes-Drever experiment because this experiment is by far the most precise of all precision experiments (accuracy $\sim 10^{-23}$) in the field of gravity. It is hoped that by the next international conference on precision experiments in relativity this issue may be settled to everyone's satisfaction.