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<p>Below find some remarks on the recent status of advanced propulsion: I had a two hour conversation with Dr. M. Tajmar in Sacramento at JCP, who reported earlier on the artificial generation of an acceleration field. The experiments were/are performed at the ARC (ESA certified) test center at Seibersdorf, Austria (<a href="http://www2.arcs.ac.at/">http://www2.arcs.ac.at/</a>). I was also at the physics dept of Berkeley univ. the next day (13 July), (getting a parking ticket of \$ 28, being pulled over by the police. Parking impossible) when Dr. Tajmar gave an excellent presentation for almost two hours.</p> <p>As I learned during my conversation with Dr. Tajmar, the measuring process of the acceleration does not take place at a certain angular frequency, <math>\omega</math>, as we had assumed in the original paper, see Eq. (10). Instead, the superconductor is rotated with constant or variable angular acceleration, <math>\dot{\omega}</math>, from angular frequency 0 up to a maximum value. The measured data show no dependence on <math>\omega</math> as our final Eq. (16) predicted. Therefore, Dr. Tajmar and I concluded that our derivation is not correct. (there was also a factor of square root 2 missing in Eq. (17), but this was irrelevant for the result).</p> <p>In the experiment, the resulting gravitational field is in the circumferential direction and is a rotational field. In his Berkeley talk Dr. Tajmar showed new measured results, now with four accelerometers in the circumferential plane, and an improved signal to noise ratio of 15 to 1. The experiments have been done for more than three years, and my impression is that Tajmar et al. very carefully looked at all kinds of experimental errors. He presented a long list in his Berkeley lecture.</p> <p>My personal conclusion is that these experimental results are here to stay.</p> <p>Now back to our theory, termed Extended Heim Theory and the comparison with Tajmar's experiments. As you might know, EHT predicts six fundamental physical interactions. One is the conversion of photons into so called gravitophotons, our fifth interaction, which is responsible for the measured acceleration, according to our understanding. The sixth interaction comes from a slightly repulsive gravitational force, the messenger particle is called quintessence particle. In the attached paper we also give the respective coupling constants.</p> <p>Next, the prediction that EHT makes. In our original derivation we had no dependence on the angular frequency <math>\omega</math>. Since it is always difficult to exactly figure out the details of an experiment, we ended up with the wrong interpretation. That is, we were convinced to have to introduce an additional scaling factor <math>B/B_{max}</math>. Sounds familiar ?</p> <p>Dropping this erroneous assumption, the final formula Eq. (15) simply changes to :</p> $g = 0.04894 \text{ times } m_e/m_p \text{ times } \dot{\omega} \text{ times } r.$ <p>The meaning of the variables is: <math>g</math> is measured acceleration, <math>m_e</math> and <math>m_p</math> are the electron and proton mass, respectively. The factor 0.04894 is the numerical value of the coupling constants as published in the book by Heim and Dröscher in 1996, <math>r</math> is the distance of the accelerometer from the center of the ring. Inserting this value gives an agreement that is within the measuring errors of Tajmar's experiment.</p> <p>The theory does not use any free parameters. The physics comes from the novel proposed interaction between photons and gravit</p>		

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<p>photons.</p> <p>For us this is a strong hint on the existence of a fifth interaction. EHT also predicts that a gravitational force in the vertical direction can be generated, with a modified experiment. It would be self-propelled that is, it would work as a propellantless propulsion device. The modification should not be too challenging, as far as we understand at the moment, but without the guidelines of EHT, one will most likely not come up with the right experimental setup.</p>		