"Mass defect" in Home Conditions

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The idea to conduct experiments on "mass defect" demonstration appeared after a cycle of seminars, which took place in1993-1996 at the Moscow Aviation Institute under the direction of V. I. Patrushev, Doctor of Technical Sciences, Professor of "Designing of aerohydrodynamic systems" Department (the author of the article is also a graduate of the Department). At the seminars, an enterprising group studied and developed an applied theory of "Displacing fields" by Alexis V. Murlikin and an associate "Theory of energy exchange processes". Later the group was called **"Group studying non-inertial transference"** (non-inertial natural processes).

The experiment was aimed to test some theoretical suppositions, namely, that it is possible to influence on existent energy flows which input and output to the matter. At that the simplest way to influence indirectly is to change the medium the flows come through. In general, optic experiments on luminous flux refraction show the same. But light refraction and change of speed of light propagation at passing through different mediums is one thing; and change of mass of a material body is something new that has not ever been dealt with. Moreover you can consider light (i.e. electromagnetic radiation) to be the secondary manifestation of output energy flow. Besides mass defect is very important for nuclear physics because it "helps" to develop this branch and stimulates drawing "energy dividends" in splitting reactions, decay reactions and nuclear fusion reactions. But unfortunately we can not touch element nucleus and even million nuclei while we can easily touch metallic balls of 1 gram weight.

Let us note that a concept of mass is one of the most uncertain in physics. We can not measure mass directly. It is possible to do it only indirectly, by gravity, using scales (it does not matter what kind of scales are used), or by kinetic momentum (in this case mass is a measure of inertia) by means of dynamometers.

Thus it is evident that change of WEIGHT shown by scales is not MASS change as measure of matter quantity. Since one of the most important points of the theory of "Displacing fields" is creation of a vehicle of new generation, then one of the major tasks is to overcome gravity (to decrease weight). And this "home experiment" shows the way to solve it. However we can call it "home" only in part, because for weighing there were used electronic scales (mass-comparator with measurement accuracy of 0.1 microgram. (See Fig. 1).

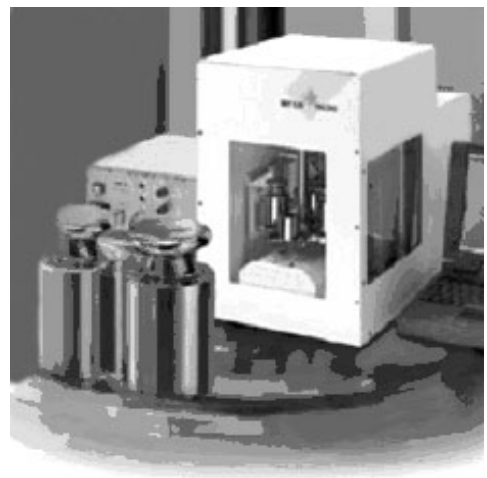

Fig. 1

Precision scales METTLER TOLEDO allows making:
High-accuracy weighing in the range
from 0.1 microgram to several tones
Measurement with resolution up to milliard points

Two sets were designed for weighing. The first one had an aluminum (Al) ball-kernel which weighed 1 gram and a lead (Pb) casing-shell consisted of two parts (half-spheres) which also has weight of 1 gram. The second set had on the contrary a lead kernel and an aluminum casing. The sets were disassembled and then hermetically assembled to make a single device with no gaps (See Fig. 2).

Since it had to be done with great accuracy and it was a piece article, not a Moscow product company undertook to produce it. And only one of the students, Nicholas Sorokin, a young boy with skilful fingers, had

helped. He invented a technology which allowed making balls of the necessary size at home conditions. He was literally pickling every micron of metal with acid and finally got the necessary size and weight.

So, the weight of a non-assembled set was: 1 gram (weight of kernel) and 1 gramm (weight of shell). Weight of an assembled set, according to the "Theory of energy exchange processes" by Murlikin, is not equal to the simple sum of the non-assembled components, and mass defect would be different for various sets right up to the change of sign.

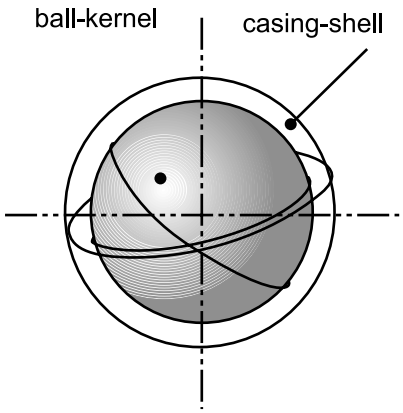

Fig. 2

Set of experimental balls

More than 50 experiments was carried out on weighing for every set. Assembled sets as well as non-assembled sets were weighed. **It was confirmed that there was an interaction between input and output flows for MATTER MAINTENANCE. It became apparent in the form of mass defect. Defect appeared in the sixth sign, i.e. it comes to the range from 0.0002% to 0.0007% of "kernel" mass (or "shell" mass). At that the lesser mass defect corresponds to aluminum shell, while the greater one corresponds to lead shell. Accuracy of weight measuring by the mass comparator exceeded the acquired result by 10 times. So we could not tell about inaccuracy of measurements.** So we had to apply to the "Russian center of testing and certification" which was very famous all over the world (Rostest-Moscow).

In general that is all, we have got an answer for ourselves, and the period of testing is behind. We have to advance; very much is still to be done. In addition let us mention one more surprise we got during the experiments. The matter concerns some time delay in receiving final results of every weighing. A qualitative picture of it is represented in Fig. 3. We did not expect that this effect would appear at such a rough level of measurement of energy exchange processes.

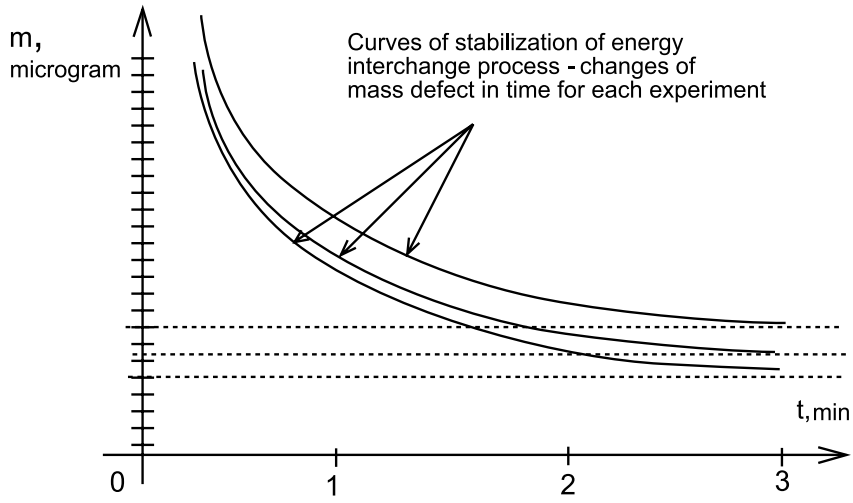

Fig. 3

Time stabilization of the process for receiving final weight

The subsequent report and detailed discussion of the experimental results by specialists (including physicists of various specializations) resulted in an unexpected non-recognition of facts and distrust. The main argument was a demand to increase the number of experiments up to 5-10 hundreds. And only then scientists would be ready to accept facts. It was quite a predictable reaction for the orthodox science in the middle of 90s. It remains to hope that if the discussion took place today it would have a paved way. However it is not a fact.

In conclusion let us note that this experiment on revealing mass defect ranks with famous experiments, in which rotating gyroscopes also demonstrate mass defect (decrease of weight) and even one of higher order than in our experiment. But in return we have no rotation, no chemical and nuclear reactions, while mass defect is presented.

Let us add that it is possible to complicate the task: to make a double casing and to choose other materials for "kernel" and "shell". (See Fig. 2). In our case low prices and availability made us use Al and Pb. The results will be more interesting, for example, with Li and Os (and with other supertransuranic elements).