

Specimens with the Effect Anisotropy of Mass

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Submitted: 09 July 2024 Accepted: 15 July 2024 Published: 22 July 2024

doi <https://doi.org/10.63620/MKNJASR.2024.1026>

Citation: Salamatin, S. (2024). Specimens with the Effect Anisotropy of Mass. Nov Joun of Appl Sci Res, 1(4), 01-13.

Abstract

A test body is an object that is used to investigate various physical phenomena. It should be measurable and represent the class of objects being studied. Using test bodies, we can conduct various experiments, measure physical quantities, test the predictions of theories and establish new physical laws or clarify already known ones. In this way, test bodies play an important role in the development of the physical sciences and provide a deeper understanding of the basic principles and laws of nature. The obtaining of a new type of test bodies and a method for the measurement of their parameters is the main task of the research carried out. The article describes the technique of obtaining specimens with the anisotropy of mass property and measuring its value. With the application of a new type of test body and measurement method, our research capabilities can be greatly expanded, and they can open up new directions for development. One of the most important tasks should be the theoretical explanation of the discovered anisotropy of mass property of specimens.

Main

Despite the fact that the general theory of gravity formulated by A. Einstein has been verified by many observations and tests, many directions for further research remain [1].

The description of gravity as the effect of matter particles distorting space-time does not add to understanding; the nature of gravity remains unexplained. We are simply adding the equivalent of concepts such as ether or physical vacuum. We can say, to be honest with ourselves, that gravity is still "something unknown" whose effect on bodies is described by the mathematical equations found. This is because field forms of matter are inaccessible to our direct observation, except for the part of the electromagnetic field spectrum in the form of light. At the same time, the sufficiency of this approach for practical purposes is obvious and confirmed by many scientific and technological achievements.

Nevertheless, the expectation and necessity of the next step in the cognition of the field and material forms of matter is in the air.

A common method of studying physical fields that can be recognized as scientific is the use of a test body combined with a method of numerical measurement of the processes occurring with it. This approach has been applied from the balls thrown

by Galileo Galilei from the Leaning Tower of Pisa, Henry Cavendish's experience in determining the gravitational constant, to any measurement of current or voltage by modern digital instruments. We make extensive use of elementary particles as test bodies. For example, the oscilloscope uses electron flow for precise measurements and observations. In their work on the measurement of the effect of Earth's gravity on antimatter, the authors used antihydrogen atoms as test bodies [2].

With this understanding, we can formulate the task of finding a new research tool as the task of finding a new kind of test body. Modern ideas about the relationship between fields and material forms of matter, such as zero-fluctuations, suggest that a new kind of test body might be an object created by the action of electromagnetic or gravitational fields on matter.

To describe the behavior of a test body in the region where it is affected simultaneously by electromagnetic and gravitational fields, we need to consider the superposition of the forces produced by these fields. It means that in a given volume of space two kinds of forces influence the substance simultaneously, and they must have a field carrier-agent of influence, which simultaneously transmits the influence to the particles of the substance. The idea of such unification of influences was expressed by A. Einstein and he devoted considerable efforts to the creation of the general field theory [3].

The basic idea of experiments follows from this - one should apply to a body a static influence by a field of one kind and then fix in it changes of properties in orthogonal directions. The effect of gravity or an electromagnetic field on particles of matter should cause them to orient themselves in space, since these fields are vectorial. The elementary particles of matter are the same entity in an electric or gravitational field, so by affecting one field we can hope to get measurable changes in the properties of matter in the other field. To achieve the accumulation of such changes, the substance must be brought into a liquid state, an external field must be applied, and a prolonged solidification of the specimen must be achieved.

A static magnet of ~45 Gs and an electrostatic field source of ~100 kV were used for the experiments. Experiments have been conducted with substances such as tin, lead, zinc, paraffin, and sealing wax, but no changes in the gravitational properties of the samples have been found. It is obvious that creating conditions for smooth and sufficiently long transition of these substances from liquid to solid state is a complicated technical task. The high mobility of atoms at elevated temperatures reduces the chances of accumulating any appreciable magnitude of the expected effects.

The idea of using a chemical polymerization process, in which a substance is converted to a solid state for a long time at low temperatures, arose from the analysis of the futility of the approach described above.

The tests were continued with a solution of epoxy resin and hardener in a ratio of 10:1 to obtain a curing process of about 5 hours. The epoxy specimens showed the expected mass dependence on sample orientation when weighed. This effect was called the "effect anisotropy of mass" and can be considered as evidence for the existence of a common carrier-agent of electromagnetic and gravitational properties of matter.

On the basis of the results obtained, and in order to ensure their qualitative novelty, the experiment was modernized. Based on the existence of a common carrier-agent of electromagnetic and gravitational properties of matter, the "effect anisotropy of mass" should be observed without the application of electromagnetic forces, only under the action of gravity.

Based on the empirical principle of equality of inertial and heavy masses, ring-shaped samples were obtained by the rotation method, which also showed the effect anisotropy of mass.

For independent verification of the results, 10 samples, Table 1, were prepared and submitted to the Mass Measurement Department of the State Service of Weights and Measures. Summarized measurement results are given in Table 2, weighing description and details are given in the method section.

Table 1: Parameters of specimens

#specimen	Geometries, mm	Type of treatment for ~5-6 hours
1	Ring (R=25, r=10, h=16)	Rotating (~9500 rpm)
2	Disk (D=30, h=16)	By electric field (~100 kV)
3	Disk (D=30, h=14)	By electric field (~100 kV)
4	Disk (D=30, h=13)	By electric field (~100 kV)
5	Ring (R=25, r=10, h=11)	Rotating (~9500 rpm)
6	Cube (h=22)	By magnetic field (~35 Gs)
7	Disk (D=30, h=10)	By electric field (~100 kV)
8	Disk (D=30, h=10)	By electric field (~100 kV)
9	Disk (D=30, h=10)	By electric field (~100 kV)
10	Ring (R=25, r=10, h=9)	Rotating (~9500 rpm)

Table 2: Maximum mass difference of samples by directions, mg

#specimen	within the weighing series	between weighing series
1	0.34	10.68
2	0.19	5.04
3	0.24	6.21
4	0.08	1.51
5	0.18	7.15
6	0.08	0.27
7	0.06	0.09
8	0.07	0.14
9	0.25	2.21
10	0.15	3.31

Methods

Ten samples were submitted to an independent specialized laboratory for check weighing. The equipment used for weighing was accurate to 0.01 mg. Laboratory personnel had no further information about the samples or the expected results. They were instructed to weigh the samples and position them according to the labels provided. The cube sample had numbered faces, the round samples had „top” and „bottom” labels, and the position on the „side” was randomized.

The samples were preliminarily checked for the absence of residual magnetization and electrical charge.

Weighing was performed in series on different dates, possibly by different personnel. The instructions required 5 weighing cycles for each sample across all labels. Four weighing series were performed and the complete data set is shown in the file weighing-data-set.csv.

Weighing-data-set

series_no	sample_no	weighing_no	mark	weight
ser_1	1	1	'bottom'	26.6609
ser_1	1	1	'side'	26.66087
ser_1	1	1	'top'	26.66095
ser_1	1	2	'bottom'	26.66074
ser_1	1	2	'side'	26.66083
ser_1	1	2	'top'	26.66081
ser_1	1	3	'bottom'	26.66072
ser_1	1	3	'side'	26.66078
ser_1	1	3	'top'	26.66067
ser_1	1	4	'bottom'	26.66078
ser_1	1	4	'side'	26.66062
ser_1	1	4	'top'	26.66069
ser_1	1	5	'bottom'	26.66069
ser_1	1	5	'side'	26.66064
ser_1	1	5	'top'	26.66061
ser_1	2	1	'bottom'	11.12945
ser_1	2	1	'side'	11.12939
ser_1	2	1	'top'	11.12951
ser_1	2	2	'bottom'	11.1294
ser_1	2	2	'side'	11.12939
ser_1	2	2	'top'	11.12942
ser_1	2	3	'bottom'	11.12936
ser_1	2	3	'side'	11.12934
ser_1	2	3	'top'	11.12941
ser_1	2	4	'bottom'	11.12937
ser_1	2	4	'side'	11.12935
ser_1	2	4	'top'	11.12936
ser_1	2	5	'bottom'	11.12944
ser_1	2	5	'side'	11.12932
ser_1	2	5	'top'	11.12937
ser_1	3	1	'bottom'	9.88148
ser_1	3	1	'side'	9.88138
ser_1	3	1	'top'	9.88154
ser_1	3	2	'bottom'	9.88134
ser_1	3	2	'side'	9.8813
ser_1	3	2	'top'	9.88136
ser_1	3	3	'bottom'	9.88134
ser_1	3	3	'side'	9.88135
ser_1	3	3	'top'	9.88141

ser_1	3	4	'bottom'	9.88139
ser_1	3	4	'side'	9.88135
ser_1	3	4	'top'	9.88139
ser_1	3	5	'bottom'	9.88139
ser_1	3	5	'side'	9.88133
ser_1	3	5	'top'	9.88136
ser_1	4	1	'bottom'	9.50738
ser_1	4	1	'side'	9.50736
ser_1	4	1	'top'	9.50738
ser_1	4	2	'bottom'	9.50732
ser_1	4	2	'side'	9.50735
ser_1	4	2	'top'	9.50734
ser_1	4	3	'bottom'	9.50734
ser_1	4	3	'side'	9.50734
ser_1	4	3	'top'	9.50739
ser_1	4	4	'bottom'	9.50736
ser_1	4	4	'side'	9.50735
ser_1	4	4	'top'	9.50737
ser_1	4	5	'bottom'	9.5074
ser_1	4	5	'side'	9.50737
ser_1	4	5	'top'	9.5074
ser_1	5	1	'bottom'	18.81119
ser_1	5	1	'side'	18.81121
ser_1	5	1	'top'	18.81122
ser_1	5	2	'bottom'	18.81113
ser_1	5	2	'side'	18.81111
ser_1	5	2	'top'	18.81117
ser_1	5	3	'bottom'	18.81111
ser_1	5	3	'side'	18.81114
ser_1	5	3	'top'	18.81116
ser_1	5	4	'bottom'	18.81113
ser_1	5	4	'side'	18.81113
ser_1	5	4	'top'	18.81112
ser_1	5	5	'bottom'	18.81113
ser_1	5	5	'side'	18.81113
ser_1	5	5	'top'	18.81112
ser_1	6	1	'1'	11.39528
ser_1	6	1	'2'	11.39528
ser_1	6	1	'3'	11.39528
ser_1	6	1	'4'	11.3953
ser_1	6	1	'5'	11.3953
ser_1	6	1	'6'	11.39532
ser_1	6	2	'1'	11.39528
ser_1	6	2	'2'	11.39531
ser_1	6	2	'3'	11.39533
ser_1	6	2	'4'	11.39531
ser_1	6	2	'5'	11.39532
ser_1	6	2	'6'	11.39533
ser_1	6	3	'1'	11.39532

ser_1	6	3	'2'	11.39531
ser_1	6	3	'3'	11.3953
ser_1	6	3	'4'	11.39533
ser_1	6	3	'5'	11.3953
ser_1	6	3	'6'	11.39533
ser_1	6	4	'1'	11.39531
ser_1	6	4	'2'	11.39529
ser_1	6	4	'3'	11.39529
ser_1	6	4	'4'	11.3953
ser_1	6	4	'5'	11.3953
ser_1	6	4	'6'	11.3953
ser_1	6	5	'1'	11.3953
ser_1	6	5	'2'	11.39529
ser_1	6	5	'3'	11.39528
ser_1	6	5	'4'	11.39531
ser_1	6	5	'5'	11.39527
ser_1	6	5	'6'	11.39528
ser_1	7	1	'bottom'	7.23447
ser_1	7	1	'side'	7.23448
ser_1	7	1	'top'	7.23449
ser_1	7	2	'bottom'	7.23449
ser_1	7	2	'side'	7.23449
ser_1	7	2	'top'	7.2345
ser_1	7	3	'bottom'	7.23446
ser_1	7	3	'side'	7.23446
ser_1	7	3	'top'	7.23447
ser_1	7	4	'bottom'	7.23447
ser_1	7	4	'side'	7.23448
ser_1	7	4	'top'	7.23448
ser_1	7	5	'bottom'	7.23447
ser_1	7	5	'side'	7.23448
ser_1	7	5	'top'	7.2345
ser_2	8	1	'bottom'	7.22423
ser_2	8	1	'side'	7.22421
ser_2	8	1	'top'	7.22423
ser_2	8	2	'bottom'	7.22424
ser_2	8	2	'side'	7.22421
ser_2	8	2	'top'	7.22423
ser_2	8	3	'bottom'	7.22421
ser_2	8	3	'side'	7.22421
ser_2	8	3	'top'	7.22423
ser_2	8	4	'bottom'	7.22423
ser_2	8	4	'side'	7.22422
ser_2	8	4	'top'	7.22421
ser_2	8	5	'bottom'	7.2242
ser_2	8	5	'side'	7.22419
ser_2	8	5	'top'	7.22422
ser_2	9	1	'bottom'	7.40625

ser_2	9	1	'side'	7.40619
ser_2	9	1	'top'	7.40624
ser_2	9	2	'bottom'	7.4062
ser_2	9	2	'side'	7.40619
ser_2	9	2	'top'	7.40621
ser_2	9	3	'bottom'	7.40617
ser_2	9	3	'side'	7.40614
ser_2	9	3	'top'	7.40622
ser_2	9	4	'bottom'	7.40617
ser_2	9	4	'side'	7.4061
ser_2	9	4	'top'	7.40608
ser_2	9	5	'bottom'	7.406
ser_2	9	5	'side'	7.40604
ser_2	9	5	'top'	7.406
ser_2	10	1	'bottom'	14.32972
ser_2	10	1	'side'	14.32969
ser_2	10	1	'top'	14.32974
ser_2	10	2	'bottom'	14.32972
ser_2	10	2	'side'	14.3297
ser_2	10	2	'top'	14.32977
ser_2	10	3	'bottom'	14.32975
ser_2	10	3	'side'	14.32967
ser_2	10	3	'top'	14.3297
ser_2	10	4	'bottom'	14.3297
ser_2	10	4	'side'	14.32965
ser_2	10	4	'top'	14.32966
ser_2	10	5	'bottom'	14.3297
ser_2	10	5	'side'	14.32967
ser_2	10	5	'top'	14.32969
ser_3	1	1	'bottom'	26.65244
ser_3	1	1	'side'	26.65238
ser_3	1	1	'top'	26.65252
ser_3	1	2	'bottom'	26.6524
ser_3	1	2	'side'	26.65238
ser_3	1	2	'top'	26.65238
ser_3	1	3	'bottom'	26.65239
ser_3	1	3	'side'	26.65238
ser_3	1	3	'top'	26.65242
ser_3	1	4	'bottom'	26.65242
ser_3	1	4	'side'	26.65237
ser_3	1	4	'top'	26.65234
ser_3	1	5	'bottom'	26.65234
ser_3	1	5	'side'	26.65233
ser_3	1	5	'top'	26.65233
ser_3	2	1	'bottom'	11.12515
ser_3	2	1	'side'	11.12511
ser_3	2	1	'top'	11.1252
ser_3	2	2	'bottom'	11.12518
ser_3	2	2	'side'	11.12513

ser_3	2	2	'top'	11.12518
ser_3	2	3	'bottom'	11.12523
ser_3	2	3	'side'	11.12518
ser_3	2	3	'top'	11.12518
ser_3	2	4	'bottom'	11.12523
ser_3	2	4	'side'	11.12511
ser_3	2	4	'top'	11.12512
ser_3	2	5	'bottom'	11.1251
ser_3	2	5	'side'	11.12508
ser_3	2	5	'top'	11.12511
ser_3	3	1	'bottom'	9.87639
ser_3	3	1	'side'	9.87636
ser_3	3	1	'top'	9.87642
ser_3	3	2	'bottom'	9.87633
ser_3	3	2	'side'	9.87632
ser_3	3	2	'top'	9.87636
ser_3	3	3	'bottom'	9.87633
ser_3	3	3	'side'	9.8763
ser_3	3	3	'top'	9.87635
ser_3	3	4	'bottom'	9.87635
ser_3	3	4	'side'	9.87629
ser_3	3	4	'top'	9.8763
ser_3	3	5	'bottom'	9.87631
ser_3	3	5	'side'	9.87627
ser_3	3	5	'top'	9.87633
ser_3	4	1	'bottom'	9.50617
ser_3	4	1	'side'	9.5062
ser_3	4	1	'top'	9.50621
ser_3	4	2	'bottom'	9.50617
ser_3	4	2	'side'	9.50622
ser_3	4	2	'top'	9.5062
ser_3	4	3	'bottom'	9.50616
ser_3	4	3	'side'	9.50615
ser_3	4	3	'top'	9.50616
ser_3	4	4	'bottom'	9.50619
ser_3	4	4	'side'	9.50616
ser_3	4	4	'top'	9.50616
ser_3	4	5	'bottom'	9.50617
ser_3	4	5	'side'	9.50616
ser_3	4	5	'top'	9.50617
ser_3	5	1	'bottom'	18.80543
ser_3	5	1	'side'	18.80541
ser_3	5	1	'top'	18.80549
ser_3	5	2	'bottom'	18.8054
ser_3	5	2	'side'	18.80541
ser_3	5	2	'top'	18.80542
ser_3	5	3	'bottom'	18.80539
ser_3	5	3	'side'	18.80535
ser_3	5	3	'top'	18.80541

ser_3	5	4	'bottom'	18.80541
ser_3	5	4	'side'	18.8054
ser_3	5	4	'top'	18.8054
ser_3	5	5	'bottom'	18.80537
ser_3	5	5	'side'	18.80538
ser_3	5	5	'top'	18.80533
ser_3	6	1	'1'	11.39516
ser_3	6	1	'2'	11.39518
ser_3	6	1	'3'	11.39517
ser_3	6	1	'4'	11.39517
ser_3	6	1	'5'	11.39518
ser_3	6	1	'6'	11.39516
ser_3	6	2	'1'	11.39516
ser_3	6	2	'2'	11.39516
ser_3	6	2	'3'	11.39516
ser_3	6	2	'4'	11.39517
ser_3	6	2	'5'	11.39516
ser_3	6	2	'6'	11.39517
ser_3	6	3	'1'	11.39517
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ser_3	6	3	'4'	11.39516
ser_3	6	3	'5'	11.39514
ser_3	6	3	'6'	11.39517
ser_3	6	4	'1'	11.39516
ser_3	6	4	'2'	11.39515
ser_3	6	4	'3'	11.39516
ser_3	6	4	'4'	11.39515
ser_3	6	4	'5'	11.39516
ser_3	6	4	'6'	11.39515
ser_3	6	5	'1'	11.39516
ser_3	6	5	'2'	11.39513
ser_3	6	5	'3'	11.39511
ser_3	6	5	'4'	11.39515
ser_3	6	5	'5'	11.39511
ser_3	6	5	'6'	11.39516
ser_3	7	1	'bottom'	7.23444
ser_3	7	1	'side'	7.23445
ser_3	7	1	'top'	7.23445
ser_3	7	2	'bottom'	7.23446
ser_3	7	2	'side'	7.23446
ser_3	7	2	'top'	7.23444
ser_3	7	3	'bottom'	7.23445
ser_3	7	3	'side'	7.23446
ser_3	7	3	'top'	7.23445
ser_3	7	4	'bottom'	7.23443
ser_3	7	4	'side'	7.23441
ser_3	7	4	'top'	7.23445
ser_3	7	5	'bottom'	7.23443

ser_3	7	5	'side'	7.23445
ser_3	7	5	'top'	7.23445
ser_3	8	1	'bottom'	7.22412
ser_3	8	1	'side'	7.22412
ser_3	8	1	'top'	7.22416
ser_3	8	2	'bottom'	7.22413
ser_3	8	2	'side'	7.22412
ser_3	8	2	'top'	7.22412
ser_3	8	3	'bottom'	7.22413
ser_3	8	3	'side'	7.22413
ser_3	8	3	'top'	7.22412
ser_3	8	4	'bottom'	7.22412
ser_3	8	4	'side'	7.22414
ser_3	8	4	'top'	7.22414
ser_3	8	5	'bottom'	7.22412
ser_3	8	5	'side'	7.22412
ser_3	8	5	'top'	7.2241
ser_3	9	1	'bottom'	7.40478
ser_3	9	1	'side'	7.40474
ser_3	9	1	'top'	7.4048
ser_3	9	2	'bottom'	7.40473
ser_3	9	2	'side'	7.4047
ser_3	9	2	'top'	7.40467
ser_3	9	3	'bottom'	7.40472
ser_3	9	3	'side'	7.40473
ser_3	9	3	'top'	7.40472
ser_3	9	4	'bottom'	7.40472
ser_3	9	4	'side'	7.4047
ser_3	9	4	'top'	7.40469
ser_3	9	5	'bottom'	7.40471
ser_3	9	5	'side'	7.40471
ser_3	9	5	'top'	7.40472
ser_3	10	1	'bottom'	14.32736
ser_3	10	1	'side'	14.32735
ser_3	10	1	'top'	14.32741
ser_3	10	2	'bottom'	14.32741
ser_3	10	2	'side'	14.32735
ser_3	10	2	'top'	14.32736
ser_3	10	3	'bottom'	14.3274
ser_3	10	3	'side'	14.32736
ser_3	10	3	'top'	14.32741
ser_3	10	4	'bottom'	14.32739
ser_3	10	4	'side'	14.32738
ser_3	10	4	'top'	14.3275
ser_3	10	5	'bottom'	14.3274
ser_3	10	5	'side'	14.32741
ser_3	10	5	'top'	14.32738
ser_4	1	1	'bottom'	26.65027

ser_4	1	1	'side'	26.65029
ser_4	1	1	'top'	26.65027
ser_4	1	2	'bottom'	26.65029
ser_4	1	2	'side'	26.65028
ser_4	1	2	'top'	26.65028
ser_4	1	3	'bottom'	26.65027
ser_4	1	3	'side'	26.6503
ser_4	1	3	'top'	26.65029
ser_4	1	4	'bottom'	26.65027
ser_4	1	4	'side'	26.65029
ser_4	1	4	'top'	26.65029
ser_4	1	5	'bottom'	26.6503
ser_4	1	5	'side'	26.65028
ser_4	1	5	'top'	26.65028
ser_4	2	1	'bottom'	11.12447
ser_4	2	1	'side'	11.12449
ser_4	2	1	'top'	11.12448
ser_4	2	2	'bottom'	11.12448
ser_4	2	2	'side'	11.1245
ser_4	2	2	'top'	11.12449
ser_4	2	3	'bottom'	11.12449
ser_4	2	3	'side'	11.12448
ser_4	2	3	'top'	11.1245
ser_4	2	4	'bottom'	11.12449
ser_4	2	4	'side'	11.12448
ser_4	2	4	'top'	11.12449
ser_4	2	5	'bottom'	11.12448
ser_4	2	5	'side'	11.12449
ser_4	2	5	'top'	11.12448
ser_4	3	1	'bottom'	9.87538
ser_4	3	1	'side'	9.8754
ser_4	3	1	'top'	9.87541
ser_4	3	2	'bottom'	9.87538
ser_4	3	2	'side'	9.8754
ser_4	3	2	'top'	9.87534
ser_4	3	3	'bottom'	9.87537
ser_4	3	3	'side'	9.87542
ser_4	3	3	'top'	9.87535
ser_4	3	4	'bottom'	9.87536
ser_4	3	4	'side'	9.87541
ser_4	3	4	'top'	9.87535
ser_4	3	5	'bottom'	9.87537
ser_4	3	5	'side'	9.87545
ser_4	3	5	'top'	9.87533
ser_4	4	1	'bottom'	9.50593
ser_4	4	1	'side'	9.50592
ser_4	4	1	'top'	9.50594
ser_4	4	2	'bottom'	9.50591

ser_4	4	2	'side'	9.50589
ser_4	4	2	'top'	9.50592
ser_4	4	3	'bottom'	9.5059
ser_4	4	3	'side'	9.50591
ser_4	4	3	'top'	9.50589
ser_4	4	4	'bottom'	9.5059
ser_4	4	4	'side'	9.50589
ser_4	4	4	'top'	9.50592
ser_4	4	5	'bottom'	9.50594
ser_4	4	5	'side'	9.50592
ser_4	4	5	'top'	9.50593
ser_4	5	1	'bottom'	18.80421
ser_4	5	1	'side'	18.80417
ser_4	5	1	'top'	18.80425
ser_4	5	2	'bottom'	18.8041
ser_4	5	2	'side'	18.80412
ser_4	5	2	'top'	18.80417
ser_4	5	3	'bottom'	18.80409
ser_4	5	3	'side'	18.80412
ser_4	5	3	'top'	18.80414
ser_4	5	4	'bottom'	18.80409
ser_4	5	4	'side'	18.80408
ser_4	5	4	'top'	18.8041
ser_4	5	5	'bottom'	18.80407
ser_4	5	5	'side'	18.8041
ser_4	5	5	'top'	18.8041
ser_4	6	1	'1'	11.39513
ser_4	6	1	'2'	11.39509
ser_4	6	1	'3'	11.39508
ser_4	6	1	'4'	11.39507
ser_4	6	1	'5'	11.39509
ser_4	6	1	'6'	11.39509
ser_4	6	2	'1'	11.39507
ser_4	6	2	'2'	11.39506
ser_4	6	2	'3'	11.39509
ser_4	6	2	'4'	11.39508
ser_4	6	2	'5'	11.39508
ser_4	6	2	'6'	11.39506
ser_4	6	3	'1'	11.39508
ser_4	6	3	'2'	11.39508
ser_4	6	3	'3'	11.3951
ser_4	6	3	'4'	11.39508
ser_4	6	3	'5'	11.39508
ser_4	6	3	'6'	11.3951
ser_4	6	4	'1'	11.3951
ser_4	6	4	'2'	11.39513
ser_4	6	4	'3'	11.39511
ser_4	6	4	'4'	11.3951
ser_4	6	4	'5'	11.39513

ser_4	6	4	'6'	11.3951
ser_4	6	5	'1'	11.39514
ser_4	6	5	'2'	11.39513
ser_4	6	5	'3'	11.39507
ser_4	6	5	'4'	11.3951
ser_4	6	5	'5'	11.39507
ser_4	6	5	'6'	11.39513
ser_4	7	1	'bottom'	7.23445
ser_4	7	1	'side'	7.23443
ser_4	7	1	'top'	7.23448
ser_4	7	2	'bottom'	7.23445
ser_4	7	2	'side'	7.23445
ser_4	7	2	'top'	7.23445
ser_4	7	3	'bottom'	7.23445
ser_4	7	3	'side'	7.23445
ser_4	7	3	'top'	7.23444
ser_4	7	4	'bottom'	7.23447
ser_4	7	4	'side'	7.23446
ser_4	7	4	'top'	7.23448
ser_4	7	5	'bottom'	7.23447
ser_4	7	5	'side'	7.23449
ser_4	7	5	'top'	7.23447
ser_4	8	1	'bottom'	7.22412
ser_4	8	1	'side'	7.22413
ser_4	8	1	'top'	7.22412
ser_4	8	2	'bottom'	7.22411
ser_4	8	2	'side'	7.22411
ser_4	8	2	'top'	7.22413
ser_4	8	3	'bottom'	7.22417
ser_4	8	3	'side'	7.22413
ser_4	8	3	'top'	7.22412
ser_4	8	4	'bottom'	7.22418
ser_4	8	4	'side'	7.22413
ser_4	8	4	'top'	7.22417
ser_4	8	5	'bottom'	7.22418
ser_4	8	5	'side'	7.22417
ser_4	8	5	'top'	7.22414
ser_4	9	1	'bottom'	7.40408
ser_4	9	1	'side'	7.40404
ser_4	9	1	'top'	7.40408
ser_4	9	2	'bottom'	7.4041
ser_4	9	2	'side'	7.40407
ser_4	9	2	'top'	7.40406
ser_4	9	3	'bottom'	7.40407
ser_4	9	3	'side'	7.40411

1. A statistical approach is not applicable to the weighting results as a series of measurements. An explanation is needed for the abrupt change in readings immediately after changing the orientation of the sample on the balance, which occurs within seconds. Unprocessed samples and other objects do not change the readings of the balance when it is turned upside down.
2. A gradual dissipation the anisotropy of mass value in the samples was observed. After a period of about one year, this property was no longer observed. This suggests that it is based on a certain structuring of the matter in the samples, which is gradually disoriented.
3. The sample weighing results from the weight-data-set.csv file cannot be used for analysis and conventions because the sample set was created randomly only to confirm the physical effect.

ser_4	9	3	'top'	7.40409
ser_4	9	4	'bottom'	7.40413
ser_4	9	4	'side'	7.40421
ser_4	9	4	'top'	7.40415
ser_4	9	5	'bottom'	7.40418
ser_4	9	5	'side'	7.4042
ser_4	9	5	'top'	7.40418
ser_4	10	1	'bottom'	14.32652
ser_4	10	1	'side'	14.32656
ser_4	10	1	'top'	14.32651
ser_4	10	2	'bottom'	14.32647
ser_4	10	2	'side'	14.32648
ser_4	10	2	'top'	14.32652
ser_4	10	3	'bottom'	14.32646
ser_4	10	3	'side'	14.32646
ser_4	10	3	'top'	14.32648
ser_4	10	4	'bottom'	14.32651
ser_4	10	4	'side'	14.32647
ser_4	10	4	'top'	14.32651
ser_4	10	5	'bottom'	14.32649
ser_4	10	5	'side'	14.32651
ser_4	10	5	'top'	14.32648

Conclusion

The method used to set the properties of objects is new and not obvious. The effect anisotropy of mass found in its application is observed at the macroscopic level and can provide a qualitatively different toolkit for studying the properties of matter, both in the form of matter and in the form of fields.

An important goal of the publication is to verify the results by other researchers. After that, a broader discussion and search for a theoretical explanation of the effect anisotropy of mass will be possible.

Data Availability

The results of the sample weighing are stored in the file weighing-data-set.csv.

References

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3. Einstein, A. (1923). Fundamental ideas and problems of the theory of relativity. Lecture delivered to the Nordic Assembly of Naturalists at Gothenburg.