GALILEO IS WRONG!

GALILEO'S EXPERIMENT

Let us assume (Fig. 1) that there is a celestial body of mass M_o (earth, moon, asteroid, etc.).

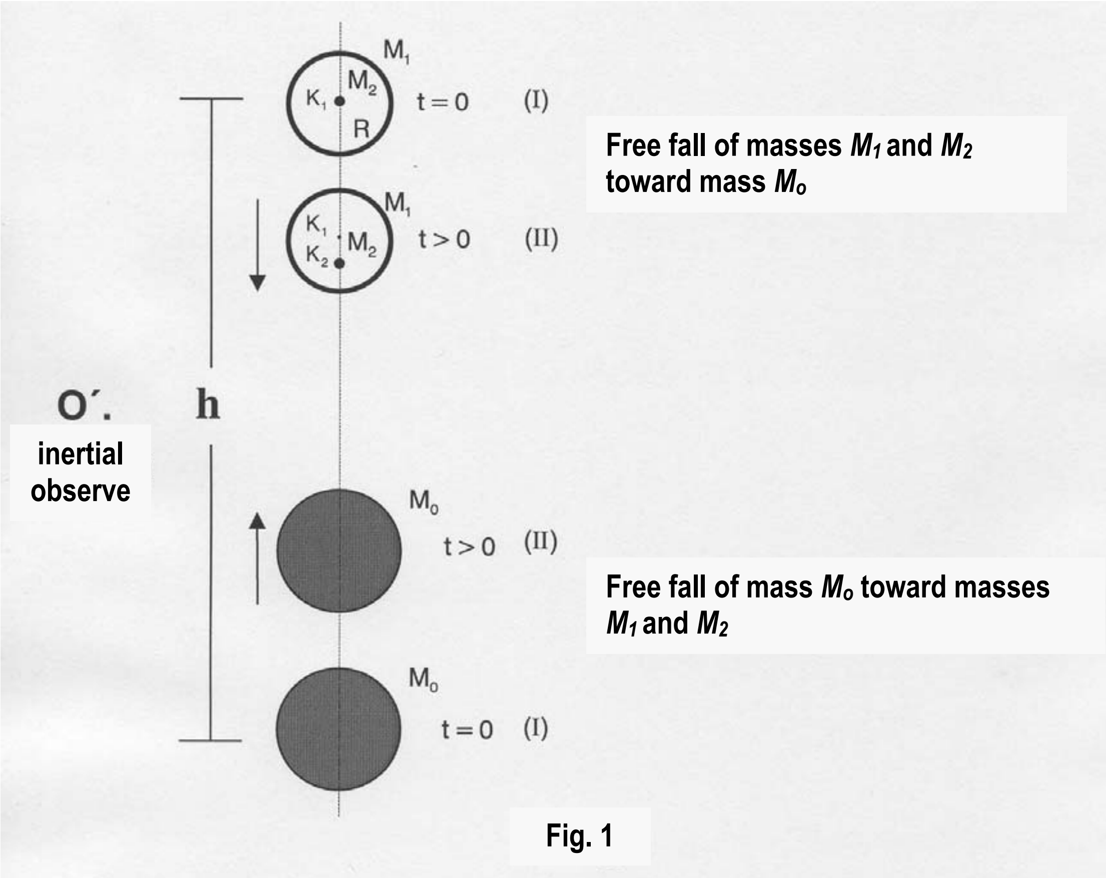


Fig. 1

At a distance h from mass M_o, we place a spherical shell of mass M_1, and radius R.

Also, at the center K_1 of the above spherical shell, we place another mass M_2, ($M_1 \neq M_2$).

Now ($t = 0$), we let the two masses M_1 and M_2 fall freely toward the celestial body M_o.

According to the "three-body problem" (M_1, M_2, M_0), –by applying to the system of the three bodies M_1, M_2, M_0 1) the principle of conservation of

energy and 2) the principle of conservation of momentum in phases I and II respectively (Fig. 1)–, after a time $t > 0$, mass M_2 will not be at the center K_1 of the spherical shell M_1, but will be found in another point K_2, where the distance ($K_1 K_2$) will be ($K_1 K_2$) > 0, (The proof, see “three-body problem” - Laws of free fall – by Christos A. Tsolkas, 2002, p.p. 30).

Consequently, the two masses M_1 and M_2 do not fall with the same velocity υ toward mass M_0 of the above celestial body.

Thus, the law of Galileo (Galileo experiment) is not valid.

Apparently, Galileo did not take into account all the above, and given the fact that mass M_0 of the Earth is much greater than masses M_1 and M_2 (of the bodies that Galileo let fall freely from the Leaning Tower of Pisa), he was led to the erroneous conclusion that **“all bodies fall with the same velocity υ toward the surface of the Earth”. Apparently this is a basic error.**

CONCLUSION

From the experiment illustrated in Fig. 1 and according to the "three-body problem" M_1, M_2, M_0, where $M_1 \neq M_2$, it results that:
Theoretically, the law of Galileo (the Galileo experiment) is not valid.
The law of Galileo (the Galileo experiment) is valid only empiricaly (i.e. approximately, e.g. for the case of the Earth).

The above conclusion is of great importance as regards the accuracy or non-accuracy of the "principle of equivalence" of the General Theory of Relativity.

DETECTOR OF GRAVITATIONAL FIELDS

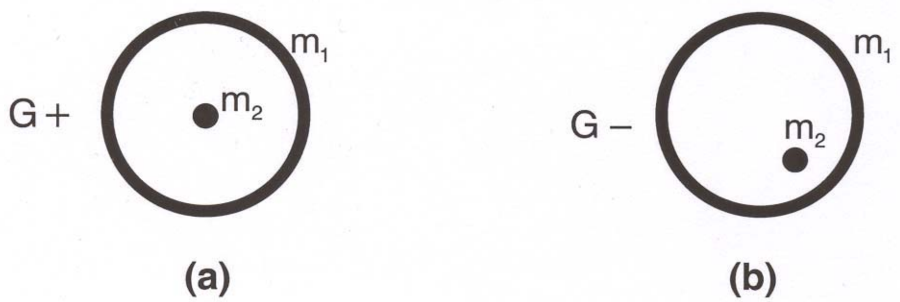
A spherical shell of mass m_1, within which there is another mass m_2 ($m_1 \neq m_2$) (Fig. 2), will be called "detector of gravitational fields".

Analytically:

(a) If mass m_2 is found at the center of the spherical shell m_1, then the detector of gravitational fields will be in its "constant" state and will be symbolized as G+, (Fig. 2a).

(b) Conversely, if mass m_2 is not found at the center of spherical shell m_1, then the detector of gravitational fields will be in its "inconstant" state and will be symbolized as G-, (Fig. 2b).

The great importance of the "detector of gravitational fields" lies in that it fully explains the concept of "Locally", which the General Theory of Relativity uses in its various experiments (such as the well-known elevator experiment).



"constant" state G+ "inconstant" state G-

Detector of Gravitational Fields

Fig. 2

Note: If in Fig. 2 mass m_1 consists of a light material, e.g. aluminum, wood, etc, and mass m_2 consists of the material of a white dwarf, black hole, etc, then the above detector will be called “detector of gravitational fields of a thick mass”.

EINSTEIN’S ERROR

GENERAL THEORY OF RELATIVITY

VARIOUS CASES

CASE 1: Let us assume (Fig. 3) that there is an inertial frame of reference (*S*). An observer *O* who stands in this inertial frame of reference, places the detector of gravitational fields in its “constant” state *G+* at a point *P*.
Then (t = 0), he lets the detector of gravitational fields move freely .
After a time t > 0, the detector of gravitational fields will be at the exact same point *P* in its “constant” state *G+*.

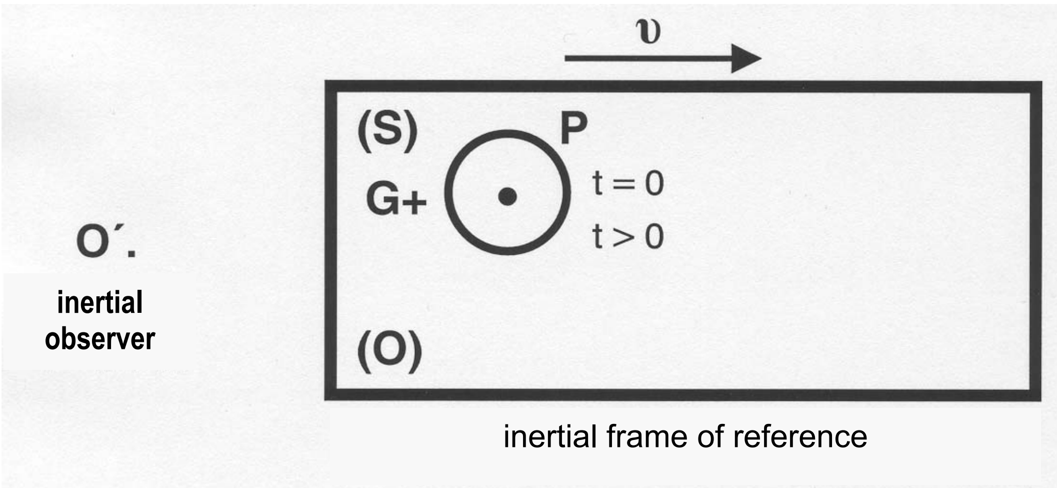


Fig. 3

CASE 2: Lets us assume (Fig. 4), that an elevator (*S*) falls freely in the gravitational field of a celestial body of mass M_0 (earth, moon, asteroid, etc.). An observer *O* who stands in the elevator places at a point *P* the detector of gravitational fields in its “constant” state *G+*.
Then (t = 0), the observer lets the detector of gravitational fields move freely.
According to the “three-body problem” (m_1, m_2, M_0), ($m_1 \neq m_2$) referred to above, after a time $t > 0$, the detector of gravitational fields will be in the elevator in its “inconstant” state *G-*.

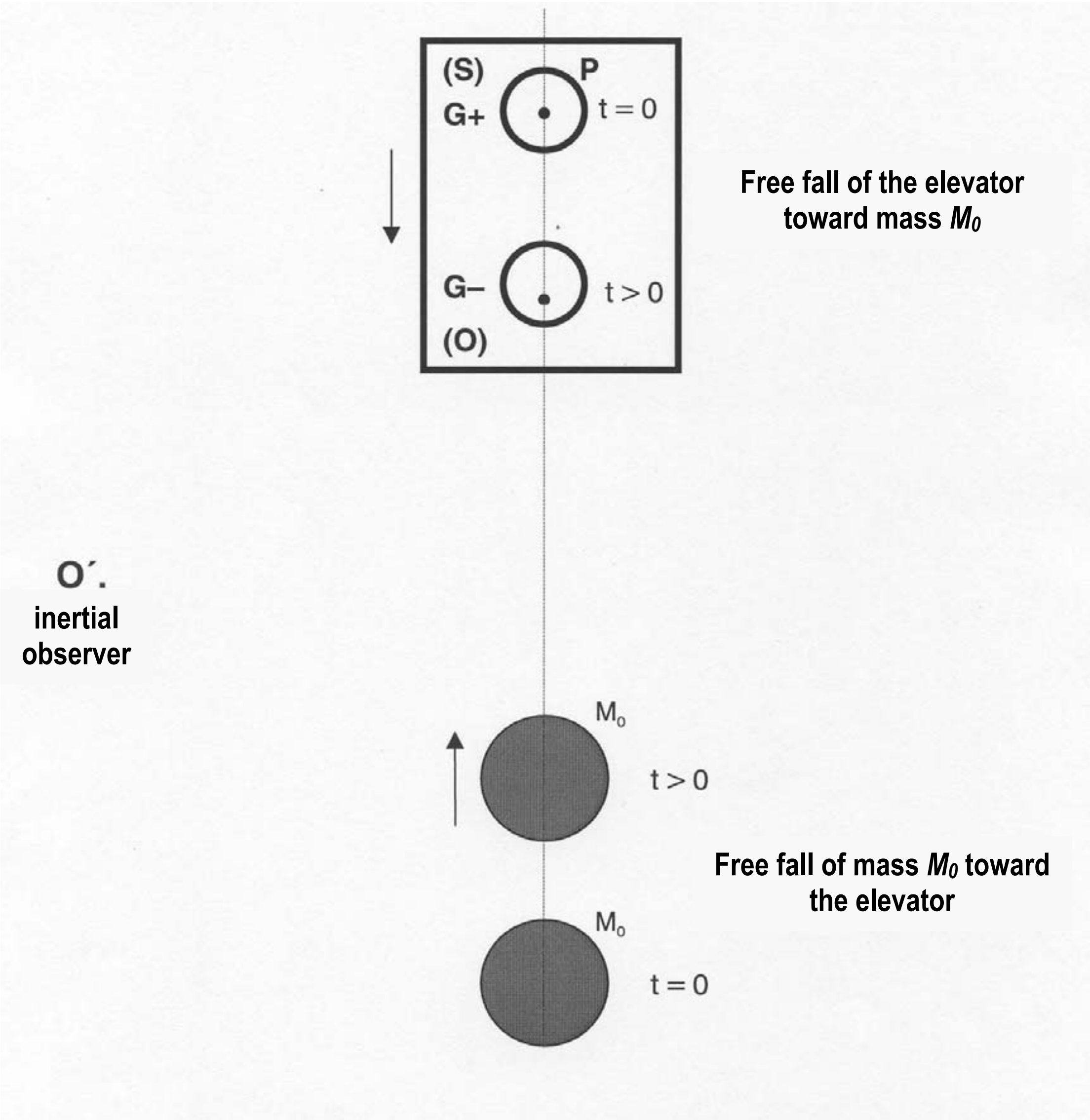


Fig. 4

CASE 3: Let us assume (fig.5) that an elevator cab (*S*) moves with acceleration *γ* away from the gravitational fields. An observer *O* who is found in the cab places at a point *P* the detector of gravitational fields in its "constant" state *G+*.

Then (t = 0) the observer lets the detector of gravitational fields move freely.

After a time *t* > 0, the detector of gravitational fields will be at another point *P´* again in its "constant" state *G+*.

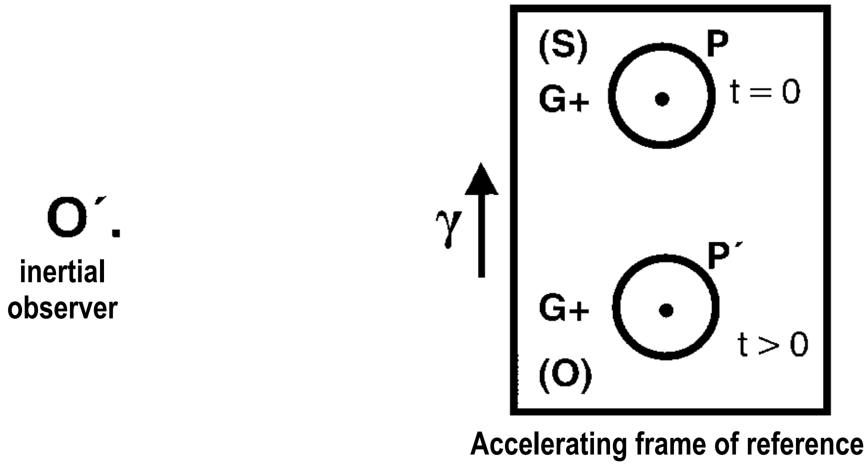
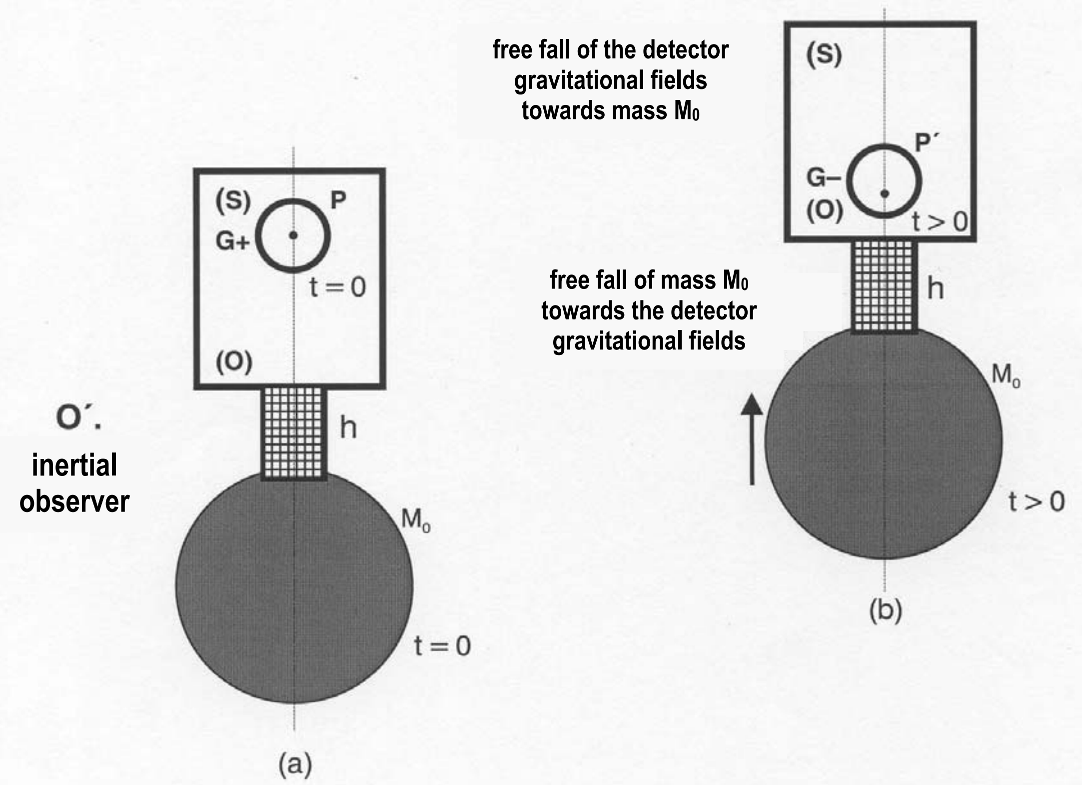


Fig. 5

<u>CASE 4</u>: Let us assume (Fig. 6) that an elevator cab (*S*) is at rest at the top of a tall building or a pillar of height *h* from the surface of a celestial body of mass M_0 (earth, moon, asteroid, etc). An observer *O* who is found in the cab places at a point *P* the detector of gravitational fields in its “constant” state *G+* (Fig. 6a).

Then (t = 0) the observer lets the detector of gravitational fields move freely.

According to the “three-body problem” (m_1, m_2, M_0), ($m_1 \neq m_2$) referred to above, after a time $t > 0$, the detector of gravitational fields will be at another point *P´* in its “inconstant” state *G-* (Fig. 6b).



Cab (S) in a state of rest at a height *h* from mass *M₀*

Fig. 6

NOTE: For the sake of simplicity, mass M_s of the cab (elevator) in cases (1), (2), (3), (4) is considered to be negligible ($M_s \approx 0$) and is not taken into account when carrying out calculations.

The points P and P´ of (S), correspond to the center of spherical shell.

CONCLUSIONS

From all the above it results that:

Since the law of Galileo is not theoretically valid, then apparently the "principle of equivalence" of the General Theory of Relativity is not valid either.

As it is already known, the "principle of equivalence" is predicated on the accuracy of the law of Galileo.

Hence, in cases (1), (2), (3) and (4) observer *O* who stands in the elevator (cab *S*) can easily find out with the aid of the detector of gravitational fields the following:

a) **Whether he is inside an inertial frame of reference (*S*) (Fig. 3).**
b) **Whether he is inside an accelerating frame of reference (*S*) (Fig. 5).**
c) **Whether he stands in a frame of reference (*S*) which is found within the gravitational field, of a celestial body of mass M_o (free fall, Fig. 4 or whether it lies in a state of rest, Fig. 6).**

Consequently, in the above cases (1), (2), (3), (4), observer O can easily find out whether the forces acting on the frame of reference (*S*) are gravitational forces or inertial forces. The latter signifies that gravitational forces are never equivalent to inertial forces, as the General Theory of Relativity erroneously holds on the basis of the well-known "principle of equivalence".

In other words, the nature of gravitational forces is totally different than the nature of inertial forces, and these two forces are never equivalent.

Therefore, after everything that has been described above, it is inferred that the "principle of equivalence" is wrong and consequently the entire General Theory of Relativity is wrong.

COMMENT

Unfortunately, Einstein's error consists in that he relied on erroneous empirical findings of the Galileo experiment, in order to formulate an erroneous principle, as is the "principle of equivalence".

Dear friends,

In all honesty, I cannot begin to understand why after everything that has been published on www.tsolkas.gr, Universities, Research Centers, Scientists, etc, have failed to realize that the Theory of Relativity is wrong.

Christos Tsolkas

December 2002.

THE END OF EINSTEIN
(A simple example)

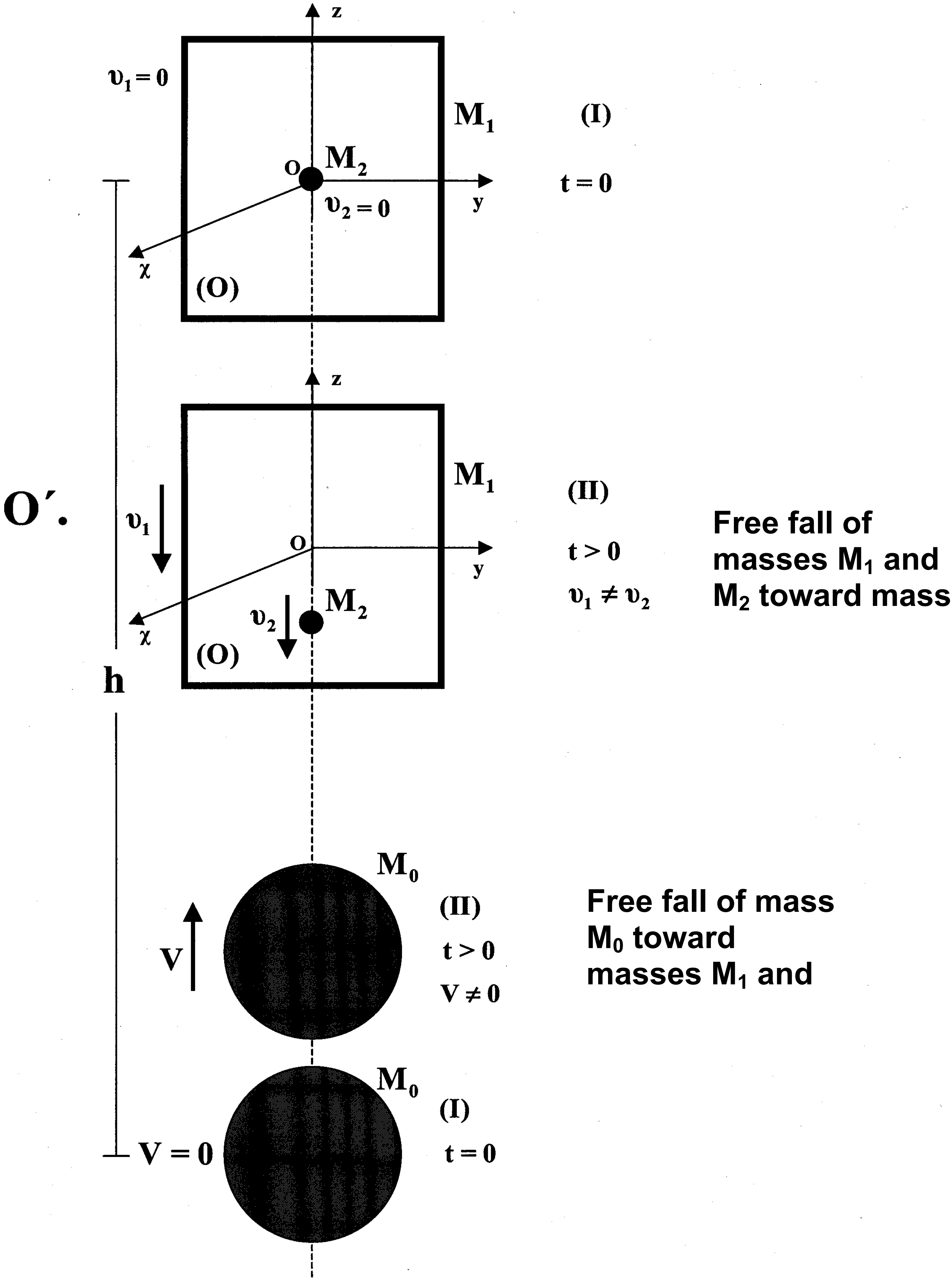

z
$\upsilon_1 = 0$
M_1
(I)
O
M_2
$t = 0$
$\upsilon_2 = 0$
y
χ
(O)
z
M_1
(II)
O′.
Free fall of
masses M_1 and
M_2 toward mass
υ_1
O
$t > 0$
y
$\upsilon_1 \neq \upsilon_2$
υ_2
M_2
χ
(O)
h
M_0
Free fall of mass
M_0 toward
masses M_1 and
(II)
V
$t > 0$
$V \neq 0$
M_0
(I)
$V = 0$
$t = 0$

fig.a

Where:
M_1 = mass of elevator
M_2 = mass, ($M_1 \neq M_2$)
O = e.g center of mass of the elevator,(rectangle or spherical).
υ_1 = velocity of mass M_1 (elevator), (for the inertial observer O´)
υ_2 = velocity of mass M_2, (for the inertial observer O´)
M_0 = mass (earth, moon, asteroid etc.)
V = velocity of mass M_0 (for the inertial observer O´)

CONCLUSION

According to the “three-body problem” M_1, M_2, M_0 ($M_1 \neq M_2$) for $t > 0$ (see. «Galileo is wrong!», (fig. 1)), we have fig.(a) :

a) $\upsilon_1 \neq \upsilon_2$, for the inertial observer O´, and

b) $\upsilon'_2 \neq 0$,for the observer (O), in the elevator.

Where: υ'_2 = the velocity of mass M_2 for the observer (O), in the elevator.

Consequently, the «principle of equivalence» of Einstein is WRONG!!!

NOTE: : According to the Theory of Relativity, for t>0, fig.(a), are:

a) $\upsilon_1 = \upsilon_2$, for the inertial observer O´, and

b) $\upsilon'_2 = 0$, for the observer (O), in the elevator.

This is the basic error of Einstein.

Christos A. Tsolkas
January 2003