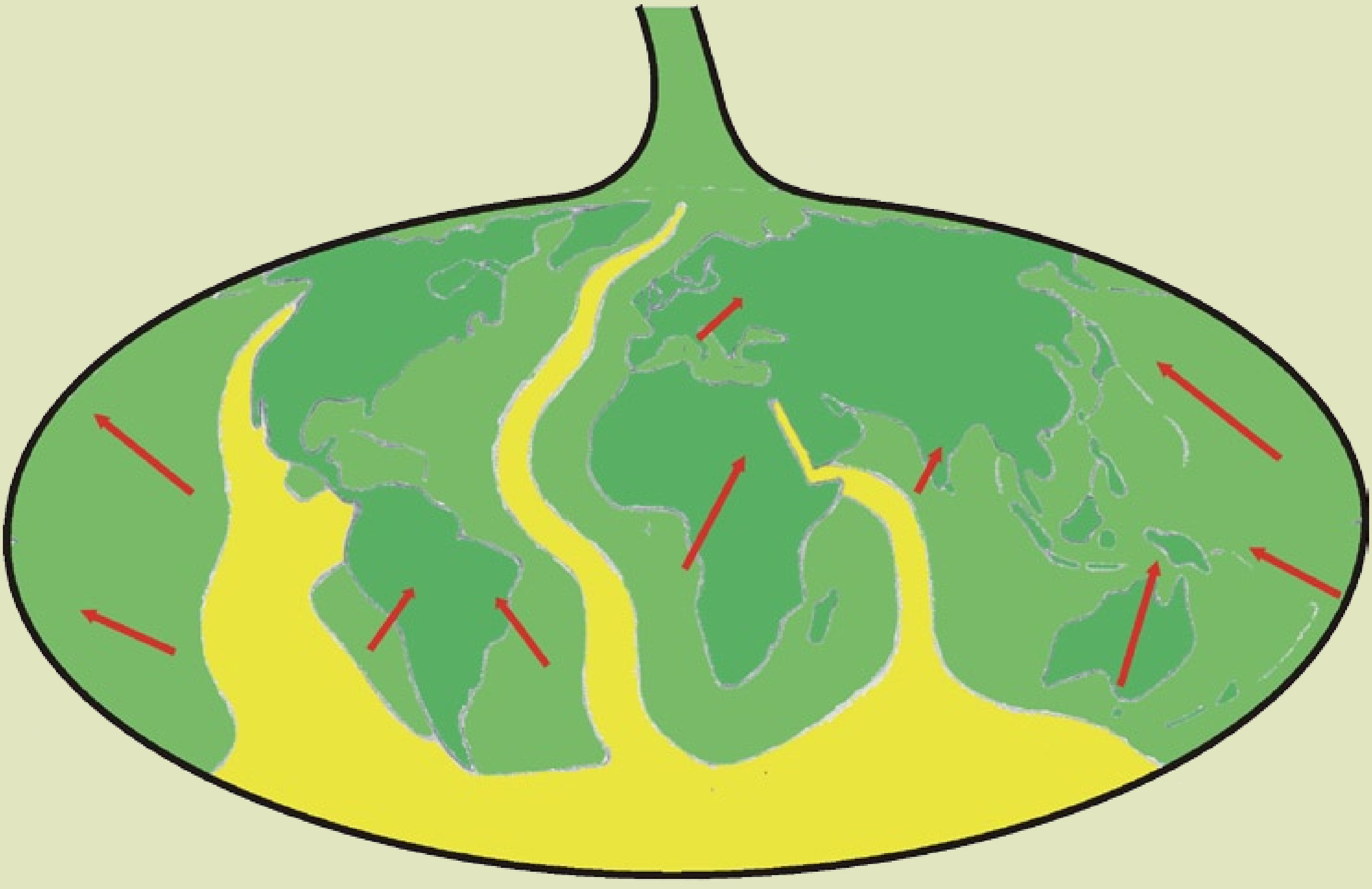
Jan Koziar

Expanding Earth and Space Geodesy

(extended abstract)



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Front cover

General motion of lithospheric plates, in relation to their deep basement, proceeding apparently northward on the Earth, expanding asymmetrically southward.

General apparent motion of the plates to the north (except of the Antarctic one), considered on a non-expanding Earth, creates the so-called "Carey's Arctic Paradox " which is one of the proofs of the expansion of the Earth.

Space geodesy measurements are in a full harmony with plate motion in Carey's Arctic paradox.

The picture on the cover refers to Carey's "flower bud" model of southward asymmetrical expansion.

Introduction 2013

The paper was published in the Pre-Conference Book of the 36th Course of the International School of Geophysics **Interdisciplinary Workshop on THE EARTH EXPANSION EVIDENCE: A chalenge for Geology, Geophysics and Astronomy** (Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Sicily, 4-9 October, 2011), p. 47-53.

The limits of volume of an abstract, imposed on authors by publishers, created some inconveniences which are not obligatory in the present form. In comparison to the paper published in the Pre-Conference Book all the text has been loosened and a list of contents added, subtitles have been detailed and numbered. Apart from that all figures are in colour now. The figures and tables have been enlarged and placed in a right order. Some editorial faults have been corrected.

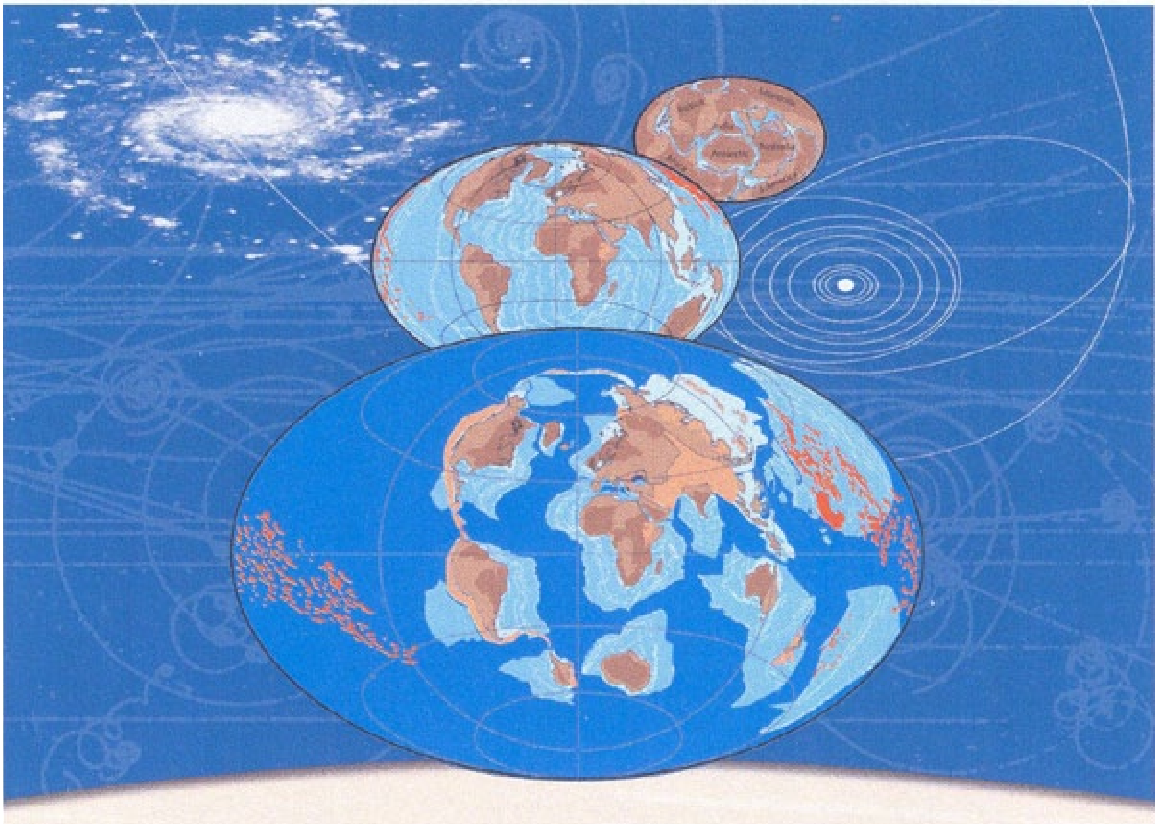
A full text of the topic was not published in the Proceedings of the Conference because of its volume, too big in relation to the imposed one, but it will be published as a separate brochure.

J. Koziar
Wrocław, June, 2013

Following three pages are: original two front pages of the Pre-conference Book of Extended Abstracts and the first page of its contents.

Extended Abstracts

of the



INTERNATIONAL SCHOOL of GEOPHYSICS

DIRECTOR Enzo **BOSCHI**

37TH INTERDISCIPLINARY WORKSHOP

THE EARTH EXPANSION EVIDENCE:

A challenge for Geology, Geophysics and Astronomy

DIRECTORS *Stefan* ***Cwojdzinski*** | *Giancarlo* ***Scalera***

4 | 9 October **2011** | Erice, Sicily, Italy

ETTORE MAJORANA FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE

"Ettore Majorana" Foundation and Centre for Scientific Culture (EMFCSC)

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Director of the School of Geophysics	Prof. Enzo Boschi

Directors of the Workshop Dr. Stefan Cwojdziński & Dr. Giancarlo Scalera

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ORAL CONTRIBUTIONS

Expanding Earth and Space Geodesy

extended abstract

Jan Koziar
Wrocław Geotectonic Laboratory
ul. Bacciarellego 75/10, 51-649 Wroclaw, Poland

Contents

1. Introduction

Geotectonic measurements performed by space geodesy are usually interpreted in the frame of plate tectonics and in this way they confirm this paradigm by circular argument (Koziar, 2002). However, a critical analysis of space geodesy results reveals expansion of the Earth in several ways.

2. Problem with global ellipsoidal reference frame

Space geodesy was able to construct the global ellipsoidal reference frame which originates in the Earth's barycentre. However, it assumes (as plate tectonics does) that the ellipsoid has a constant size. Since the ellipsoid is firmly mathematically tied with the geoid (by the procedure of minimization of the sum of the squares of mutual distances), the latter, as a physical reality, stretches the ellipsoid radially during expansion. This unnoticed process (in frame of plate tectonics) produces several problems described below.

3. Problems with ellipsoidal coordinates as a basis of geodynamic interpretations in space geodesy

a. Vertical coordinates

Space geodesy measurements are made in the Cartesian barycentre coordinates and at that stage they give the precise real distance from the Earth's barycentre. However, after that the Cartesian coordinates are usually transformed to the ellipsoidal ones and only then they are interpreted. So, they record only the changes of the stations' heights above the ellipsoid (local vertical tectonics) but not the general growth of the Earth's radius. It is only when they are compared directly that they record expansion of the Earth (Table I).

b. Horizontal coordinates

Transformation of the orthogonal coordinates to the ellipsoidal horizontal ones on the expanding ellipsoid, which is assumed constant, results in fictitious shrinking of the plates and fictitious slowing down of the geophysically measured spreading rate. The first illusory process illusively confirms plate tectonics and it is ruled by Blinov's principle[1] (Blinov, 1987).

4. Blinov's principle

Let us consider a section of the expanding Earth with an inextensible plate (Fig.1a).

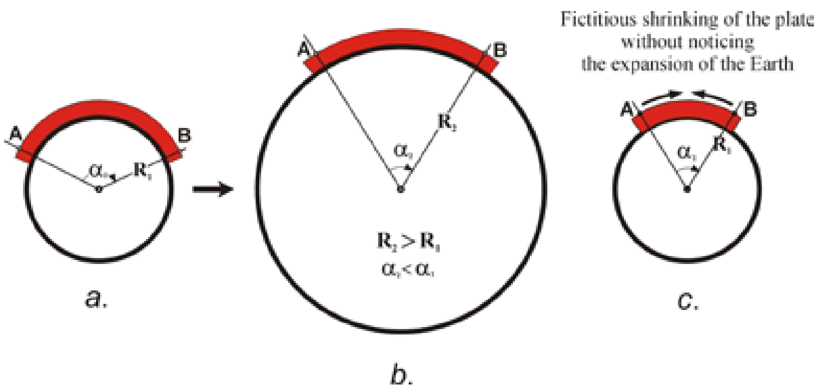

Fig. 1. *Blinov's principle (explanation in text)*

[1] The term "Blinov's principle" was introduced by Koziar (2003) and then used by Bajgarová (2004) and Bajgarová and Kostelecký (2005).

Two points on the plate (A and B) determine a central angle α_1. After some time the radius of the Earth has increased (Fig.1b). Since the plate is not stretched (the only deformation is its flattening) the geodesic distance between the points has not increased. Therefore, the central angle has decreased. At the same time the geographical (geodesic) coordinates of the points have been changed and from this change the new smaller central angle (α_2) can be noticed. Now, let us consider a situation when the change of the geodesic coordinates of the points A and B is recorded but the expansion of the Earth is not taken into account (Fig. 1c). Thus, on the base of the changed coordinates, and the decreased central angle corresponding to that change, the reduction of the distance between A and B will be deduced. The reduction is fictitious, of course.

5. Blinov's principle demonstrated on a plate lying on an expanding basement with an expanding geodetic graticule

Blinov's principle can be demonstrated in horizontal dimensions on the geometrical model of plates on the expanding Earth (Koziar, 1994; www.wrocgeolab.pl/plates.pdf). Let us consider a single plate on the expanding basement with an expanding net of coordinates (Fig. 2a).

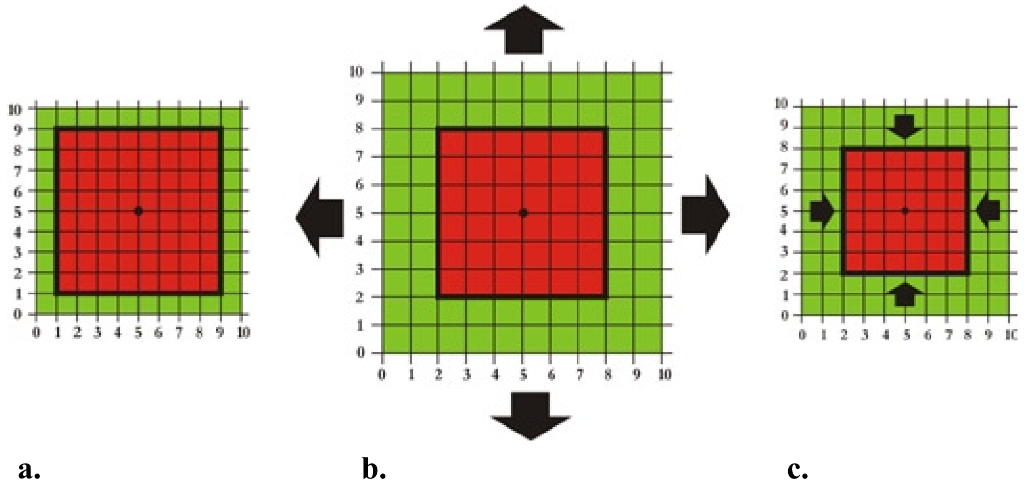

Fig. 2. Blinov's principle demonstrated in horizontal dimensions (explanation in text)

The stable point of transformation (SPT) of the plate is here (5, 5). All the points of the plate change their coordinates during expansion, except the SPT (Fig. 2b). Now, if the expansion is unnoticed (or rejected) and the change of coordinates is correctly recorded, then the whole plate will illusively shrink (Fig. 2c). The illusory shrinking of the plate (Fig. 2a,c) means that a distance between any two points on it (Fig. 3a) will be illusively reduced (Fig. 3b).

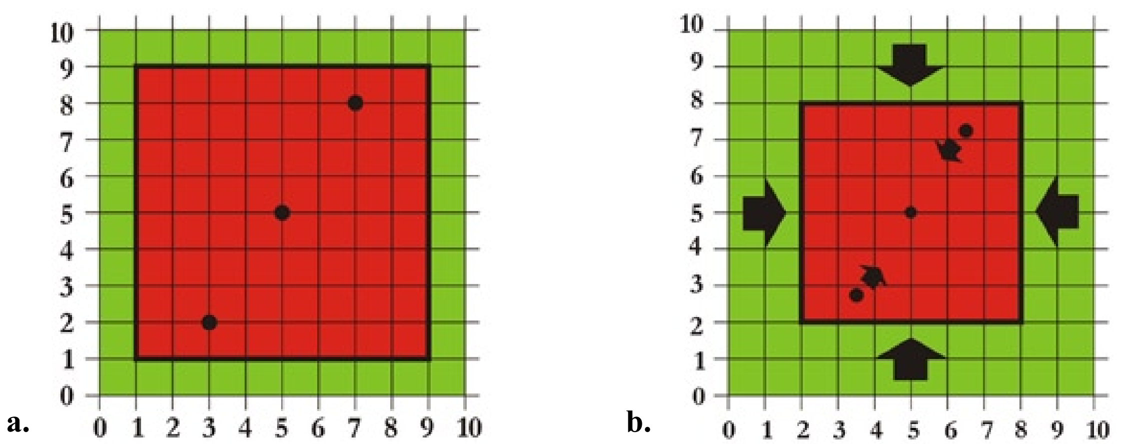

Fig. 3. Fictitious reduction of the distance between any two points on the plate at unnoticed expansion of its basement the plate (explanation in text)

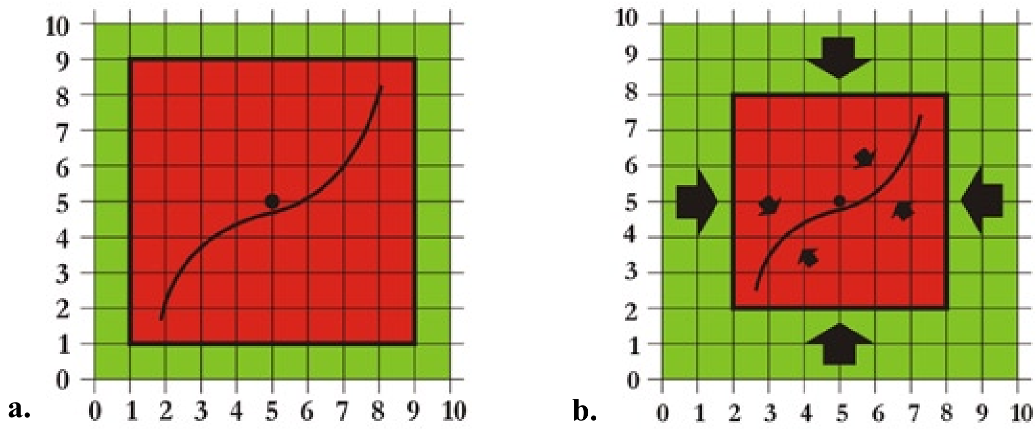

Fig. 4. False geodetic confirmation of supposed convergence in some zones at unnoticed expansion of the basement of (explanation in text)

In this situation if somebody draws any line on the plate (Fig. 4a) and assumes that it is a line of geotectonic convergence then measurements of the change in the distance between any two points, placed on opposite sides of the line, will confirm his (her) assumption (Fig. 4b).

Of course, this false conclusion does not result from direct measurements but only from comparison of distances, calculated from the coordinates of the points before and after the change.

Two rules emerge from the above:

1. The velocities, of the illusory convergent movement of two points on a plate, and the real divergent movement of two cross points of the expanding geodetic graticule (corresponding to these points on a plate) are equal as scalars but opposite as vectors.

2. Since the real divergent velocity of two cross points of the expanding graticule of coordinates is proportional to their mutual distance, thus the illusory convergent velocity of the two points on the plate, corresponding to them, is also proportional to their mutual distance.

The coefficient of the proportion was called "the Hubble coefficient" (Koziar, 1994) and marked by ***h*** (to differentiate it from "the Hubble constant", marked as ***H*** and used in cosmology). For the calculated annual increment of the Earth's radius equal to 2.6 cm/year (Koziar, 1980; www.wrocgeolab.pl/floor.pdf), **h = 4 x 10^{-9} year $^{-1}$** .

6. Intraplate SLR measurements proving fictitious character of the convergence geodetically deduced in the frame of plate tectonic

These are the measurements performed inside plates and displaying shrinking, however the plates have no structures which can be interpreted as convergent ones. These are: the cratonic part of North America (Carey, 1988; Smith et al., 1994), Australia (Carey, 1988; Smith et al., 1994), Eurasia (Smith et al.,1990) and the inner part of the Pacific plate (Robins et al., 1993; Smith et al., 1994). These cases will be demonstrated in the full version of this paper.

7. Illusory contraction of the VLBI net

Japanese authors (Heki et al., 1989) calculated the changes of the chord distances (baselines) between VLBI stations on the northern hemisphere (northern megaplate – see Fig. 6a) and concluded that it is uniformly contracting at the rate 1.3 mm/year/1000 km (h = 1.3 x 10^{-9}/year). They even suspected the contraction of the whole Earth. However, the contraction of the net is only illusory and caused by the expansion of the Earth.

If the northern megaplate was ideally inextensible the rate of growth of the Earth's radius would be 8.28 mm/year. However, the megaplate is extensible, so the rate is certainly higher than 1cm/year (see Table I).

8. Interplate SLR measurements displaying fictitious slowing down of the spreading rate

SLR surveys across the Atlantic display significant reduction of the value of the spreading rate in comparison with the geophysical records (Smith et al., 1990; Murata, 1993). Such results are inexplicable in the frame of plate tectonics but their origin is obvious on the expanding Earth (Koziar, 1998). It will be explained this time using vertical sections of the former model (Fig. 2, 3 and 4). In Fig. (5) the sections of two plates, fastened to the stretched basement at their stable points of transformation (SPTs – screws) are presented.

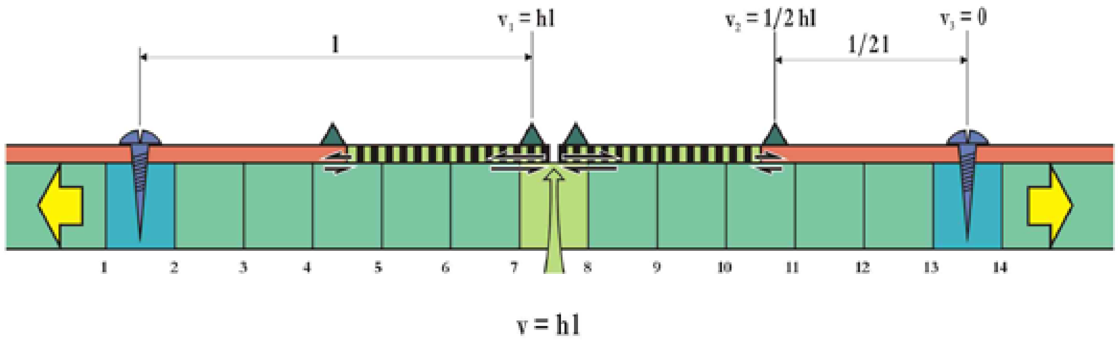

Fig. 5. *Speed of the expanding basement in relation to a plate (explanation in text)*

The speed of the basement in relation to the edge of the plate i.e. the rifting speed $\boldsymbol{v_1}$, is equal to the distance ***l***, between the rift and the SPT, multiplied by the Hubble coefficient ***h***. The rifting speed is, of course, equal to the speed of spreading, calculated from magnetic stripes. If a distance from the SPTs is halved the speed $\boldsymbol{v_2}$ of the basement in relation to the plate is also halved. At the stable point of transformation ($l = 0$) the speed $v_3 = 0$.

Let us now consider the speeds *v* of the points (corresponding to the sites of geodetic stations) moving away at both sides of the rift (Fig. 6), and in situation when changes of coordinates are recorded but expansion of the basement (together with the geodetic graticule) is not noticed.

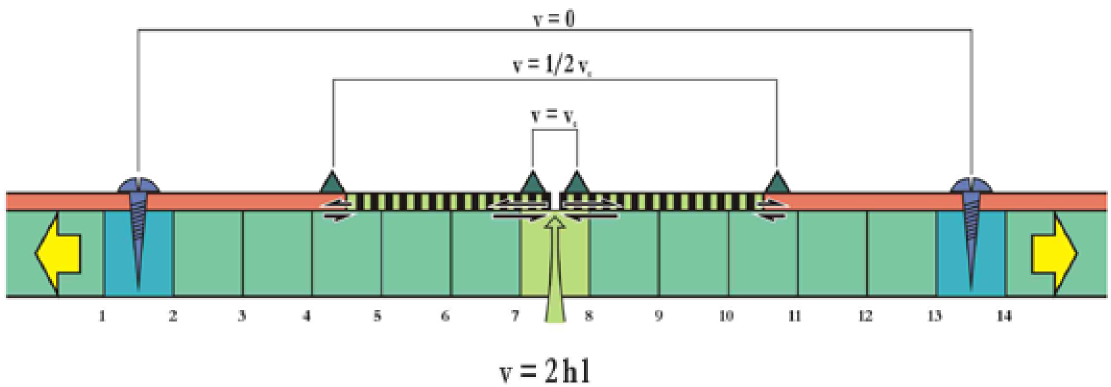

Fig. 6. *Relative speeds of the geodetic stations on the opposite sides of the ridge when the expansion of the basement is not noticed (explanation in text)*

In this case the measured speed will be the speed of <u>the fictitious shrinking of the plates</u>. And so, between the points, lying in the vicinity of the rift, it will be equal to the speed of bilateral spreading, $\boldsymbol{v_s}$. At the points placed in the middle of the distance between the rift and the SPTs, the speed will be halved. Between the SPTs the speed will be zero.

It must be pointed out that on the expanding Earth (Fig. 6) the real velocity between any two points, located on both sides of the rift, is equal to the spreading rate at the rift. However, the velocity relative to the basement is lowered the more the further from the rift. And these values are interpreted incorrectly by space geodesy (in frame of plate tectonics) as spreading rates. In this way the spreading rates are fictitiously lowered.

It must be also pointed out that plate tectonics does not distinguish these above two different types of velocities.

9. SLR measurements across the Pacific displaying its expansion

SLR surveys across the Pacific (both South and North) display directly its expansion (Christodoulidis et al., 1985; Smith et al., 1990; Murata, 1993), which means the expansion of the Earth.

10. Space geodesy global movement of the plates confirms Carey's Arctic paradox pattern

Carey (1976) noticed a special pattern of global movement of the plates which proves expansion of the Earth. He called it "the Arctic paradox". The pattern is precisely demonstrated in Fig. 7 (referring to his "flower bud" model).

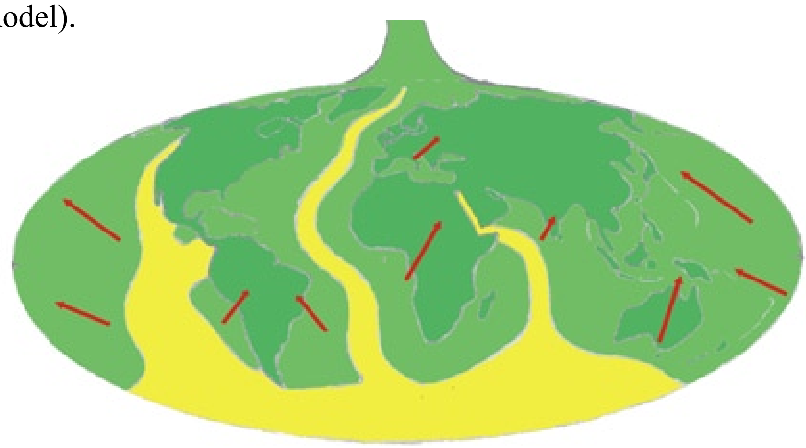

Fig. 7. *Precise Carey's Arctic Paradox pattern referring to his "flower bud" model (explanation in text)*

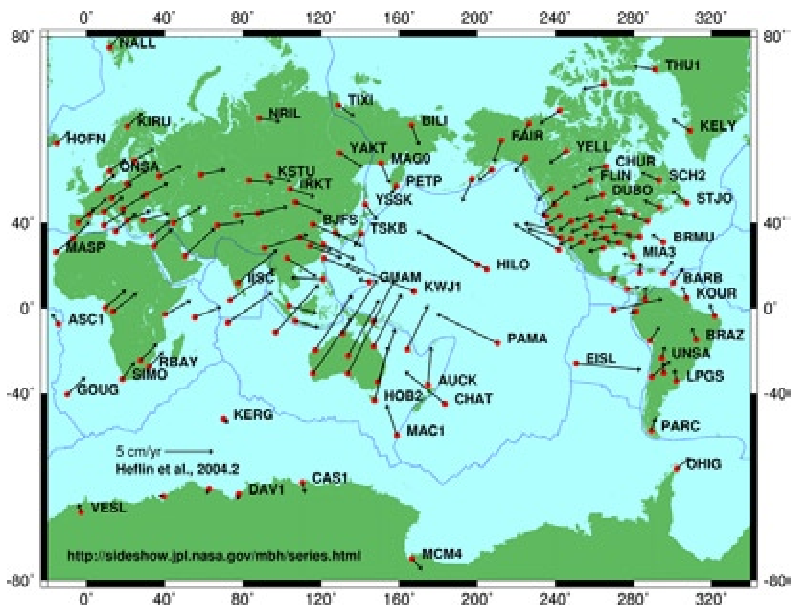

Fig. 8. *Space geodesy global pattern of the of the plate movement plates movement (NASA, 2008)*

In Fig. (7) the Antarctic plate is removed as well as the whole oceanic post-Paleocene lithosphere. The remaining lithosphere creates a huge “northern megaplate”. Parts of this megaplate move relative to their expanding basement according to the marked arrows. The global pattern obtained by space geodesy is almost the same (Fig. 8), so it proves the expansion of the Earth.

The collisions appearing in the present global space geodesy models are fictitious and will be explained in details in the full version of this paper.

11. Present annual increment in the Earth’s radius

The present value of the rate of growth of the Earth’s radius emerges from the space geodesy surveys in several different ways and the results are similar (Table I).

Table I. Present rates of the growth of the Earth’s radius obtained by space geodesic methods

Author	Year	Rate [cm/yr]	Method
Blinov[1]	1987	2.43	Doppler Surveying (general uplift)
Carey[2]	1988	2.08 ± 0.8	SLR (chord analysis)
Maxlow[3]	2000	>1.8	VLBI (general uplift)
Koziar[4]	this paper	>1.0	VLBI (fictitious baselines contraction)

[1)] correct interpretation of the results obtained by Anderle and Malyevac (1983)
[2)] W.D. Parkinson’s calculations
[3)] correct interpretation of the results obtained by Robaudo and Harrison (1993)
[4)] correct interpretation of the results obtained by Heki et al. (1989)

On the other hand this rate of growth also emerges in different ways from the geologic data (Table II).

Table II. Present rates of the growth of the Earth’s radius obtained by geological methods

Author	Year	Rate [cm/yr]	Method
Koziar	1980	2.59	Increase in the Earth’s surface area (Phanerozoic)
Blinov & Schuber	1984	≅ 2.0	Increase in the Earth’s surface area (Cenozoic)
Maxlow	2002	2.2	Increase in the Earth’s surface area (from the Archean)
Koziar[1]	1996	2.7	Increase in the Earth’s circumference
Koziar	this paper	>2.0	ratio of the lengths of Atlantic Ridge and the shore of Africa

[1)] correct interpretation of the result obtained by Le Pichon (1968)

The results are also mutually similar and similar to those obtained by space geodesy. In the Table II the last result (of present paper) is obtained in the following way: the ratio of the length of the section of the Mid-Atlantic Ridge to the length of the west shoreline of Africa corresponding to it, is 1.4. So, the Earth's radius was 4550 km at that time (before about 100 Ma) when both structures were joined together. So, the increment of the Earth's radius since that time is 1820 km. Dividing this value by 100 Ma we obtain 1.82 cm/year. It is the result at a linear growth of the Earth's radius. Because the real growth is exponential, the real present result is higher - certainly more than 2 cm/year.

12. Increase in the Earth's mass – Yarkovski's gravitational effect

Almost all expansionists, starting with the founder of the theory, a Polish engineer – working in Russia – Jan Jarkowski (1888), treat (and recently prove) the Earth's expansion as a result of the growth of its mass. The recent annual growth is of the order 10^{19} g/year: 2.8 x 10^{19} g/year (Ciechanowicz and Koziar, 1994; www.wrocgeolab.pl/dark.pdf), 1.37 x 10^{19}g/year (Scalera, 2003), or most probably 6.0 x 10^{19} g/year (Maxlow, 2002, 2005). This rate of the growth of the Earth's mass fits well with the mysterious decrease of the orbit of the geodetic satellite Lageos. This decrease is to be partially explained by "the Yarkovski's (radiation) effect". In fact it is "the Yarkovski's gravitational effect" at work.

13. Cosmological implications

The presented results (and the whole theory of the expansion of the Earth) correspond with the concept of creation of matter developed by many physicists and cosmologists and elaborated best by Fred Hoyle. The expanding Earth corresponds also with the Ambarcumian's eruptive (explosive) cosmology, which rejects speculative hypothesis of condensation of celestial bodies from nebulas, and demonstrates that they develop from the super-dense pre-stellar matter. In the case of our Solar System, and particularly of the Earth, it is neutron matter. The two theories are put together (but not to the conclusion) in the book "A Different Approach to Cosmology" (Hoyle et al., 2000).

The enormous increment of the volume at transformation of the neutron matter to the atomic one (the ratio of order 10^{14}), enhanced by the creation of the new matter, fits well with the more than tenfold increment of the Earth's volume since the Precambrian recorded by geological data (Koziar, 1980; www.wrocgeolab.pl/floor.pdf; Vogel, 1990; Maxlow, 2002, 2005).

The eruptive origin of the Solar System from neutron matter fits also well with the fact that our local atomic matter is not older than the system itself.

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