

IMPRINTS OF THE PERSONALITY AND WRITINGS OF PROFESSOR LIVIU CONSTANTINESCU IN THE THESES OF HIS PHD STUDENTS: A TRIBUTE ON HIS BIRTH CENTENARY

SORIN - CORNELIU RĂDAN

Geological Institute of Romania, 1 Caransebeș St., RO-012271 Bucharest, Romania
e-mail: sc.radan@yahoo.com

... Și poate preluarea, acum, a unor secvențe dintr-o scriere a sa, cum sunt cele ce încadrează întreaga teză, deci citatele ce preced Prologul și Epilogul – căroră le pot fi identificate particularizări, în conținutul ce leagă aceste capete ale ei, prin mesajele Pământului aduse de proprietățile (paleo)mag-netice ale rocilor, urmărind descifrări actuale cu semnificații geonomice – constituie un modest semn al unei profunde recunoștințe, de ce nu, și de dez-văluire a forței sale de influențare profesională și științifică a celor din restrânsa familie a geofizicienilor, îndeosebi a celor ce l-au cunoscut din apropiere. (Rădan, 1998, PhD Thesis: p. 327; in Romanian)¹.

Last year I received an invitation from the Department of Geophysics of the Faculty of Geology and Geophysics (University of Bucharest), particularly from *Prof. Dr. Eng. Marian Ivan*, to write some thoughts, memories, feelings regarding the **Academician Professor Liviu Constantinescu**, a contribution to the **Tribute** dedicated as a homage at his birth centenary (26 November 1914 – 26 November 2014). This has awoken in me a special concernment ... Three decades during which I had the chance to be *around* a brilliant personality have generated this state, supported also by a sentiment of honour. Immediately afterwards, however, I felt a responsibility, a concern for finding the optimal measure of the “density” and quality of the words to be used to express – in the eloquent way in which my distinguished Professor was always managing to communicate – the outline and content of the details which will define image fragments or will merge into a composite picture of a reality that began to exist almost half a century ago, that is, since the faculty years ...

To reduce as much the risk, involved in this challenging undertaking, I’ll appeal to reproducing a series of phrases written about 15 years ago, so very close to the period of



**Acad. Prof. Dr. Doc.
Liviu CONSTANTINESCU**

(<http://danhconst.net/biobiblioLC/index.html>)
(background added by the Essay’s author)

¹ “Motto”: English Version set in Bold-Italic font, at the bottom of page 44 and top of page 45.

contemporaneity with my Professor. I am referring to my *Doctoral Thesis*, which I completed in 1998, and within which the presence of the distinguished doctorate supervisor, who had accepted me as a PhD student ... (too) many years before, is felt, in spite of the fact that he had missed the moment of its finalization ... Maybe that is why, from place to place, "through" and inside of the thesis lines, and particularly, in its *Prologue* and *Epilogue*, the "imprints" of his writings are visible.

Firstly, I will give some words from the end of the doctoral dissertation, sentences with which I actually began the "Acknowledgements" of those to whom I felt indebted in that important moment of my scientific and professional life. I find that quoting this passage is appropriate, because it expresses the crux of my recognition, impressions and opinions, that is exactly what I would like to include in my contribution to the "Tribute to Professor Liviu Constantinescu". These are generated both by his presence and his absence, in those moments towards the end of 1998 when satisfaction intertwined with regret – to completely give the nuances of the emotional state I experienced in those days when the thesis was finished, but my Professor could no longer read it ...

« The author of this PhD Thesis – which now comes to its end – has not properly evaluated other possible consequences of his previously self-confessed risk² of having reached the proximity of its extreme limit.

As I extended excessively what was in fact a "stage" – as my distinguished doctoral supervisor, Acad. Prof. Dr. Doc. Liviu Constantinescu, often and insistently pointed out – so, a step in my professional life, unanticipated situation arose, one which, in fact, I did not even wish to take into consideration – that it became impossible to gather together this fruit, which was left, indeed, too much waiting to be picked. In this case, the extreme limit of another side of the above-mentioned risk was slightly overrun.

However, I benefited from having had him as Professor of Geomagnetism (and of Gravimetry), then having had him as my graduation project/license coordinator, three decades ago, and having had him become my doctoral supervisor, a quarter of a century ago.

All these steps – on the extent and significance of the latter I have just laid the adequate emphasis – remind me of an example of scientific rigor and probity. An exigent, and at the same time, a close advisor, he gave us enough freedom to feel the satisfaction, but also the responsibility of developing our own scenarios in approaching the issues under scrutiny. **And maybe, taking-up, this time, a passage from his writings, as those that frame my entire thesis – the quotations which precede the Prologue and the Epilogue – to which some corresponding elements can be identified within the work ..., through the Earth's messages brought by the (palaeo)**

² It is about a paraphrase to "A thesis can never be complete" (Krijgsman, 1996), respectively "There is the risk that a doctoral thesis could never reach its ending" (Rădan, 1998: p. 326).



Autograph for Present (TVR2)

(<http://danhconst.net/biobiblioLC/tvr2.html>)
(http://ro.wikipedia.org/wiki/Liviu_Constantinescu)



Address of Acceptance to the Romanian Academy (17 April 1992)
(Constantinescu, 1992)

(<http://danhconst.net/biobiblioLC/gallery.html>)
(<http://danhconst.net/wiki/discurs.pdf>)

magnetic properties of rocks, in actual decipherings with geonomic significations – it forms into a modest sign of profound gratitude, and why not, it reveals the force of his professional and scientific influence over those from the narrow family of the geophysicists, especially over those who knew him closely³» (Rădan, 1998: p. 327).

And because within the lines expressing my gratitude towards Professor Liviu Constantinescu there are references to the quotations that precede the *Prologue* and the *Epilogue* – chapters between which the thesis is developed –, I will pause for a moment around them, as they constitute in themselves a perfect reflection of one of his most cherished writings.

So, the *Prologue* has the following motto (Rădan, 1998: p. 1):

"Thus, the Earth is far from being silent. It is sending man numerous and various messages, which must be detected, identified and deciphered by him" (Constantinescu, 1974).

I continue the *Prologue* with my own words, interwoven with attractive and meaningful "metaphors" extracted from the above-cited book, proving, at the same time, my appreciation for my Professor's unique style of writing and speaking, and the honor I felt in taking some of his expressions and placing them inside my research field area – (*palaeo*)magnetism of rocks.

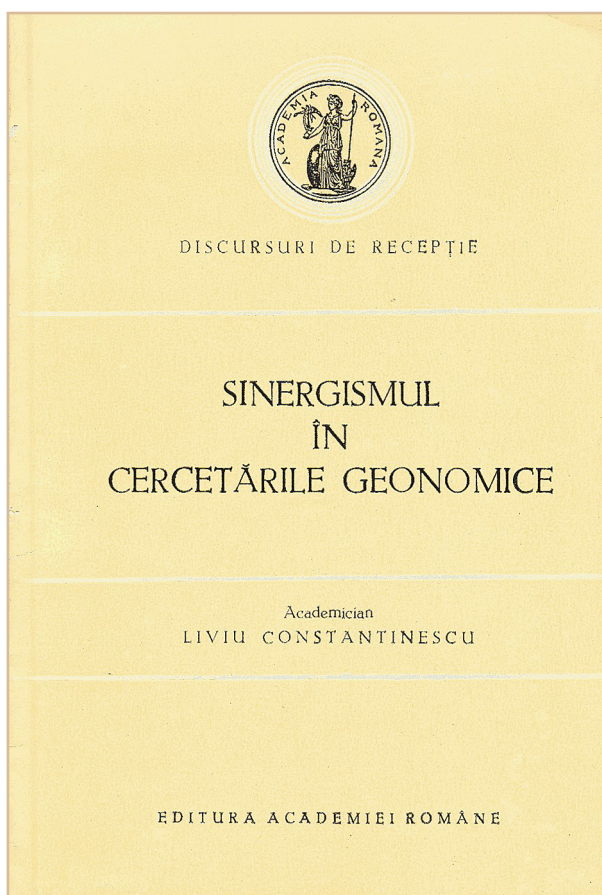
All these, probably, stem from a "necessity" of remembering him, making, in a way, amends, for the existing situation: my inability of offering him the thesis, of which completion he wished very much ...

So, here are a few lines from the *Prologue* (Rădan, 1998):

« In order to approach the inciting and at the same time complex questions that the development of such a generous topic as the **magnetic properties of rocks** brings before the one to whom such an undertaking is given, the words of Professor L. Constantinescu multiply their meanings, at the same time setting two essential guidelines concerning an invitation to develop the knowledge, but also the duties deriving from accepting this invitation. They are also valid in this case: on the one hand, the "Earth" has "many and various messages ... emitted spontaneously or transmitted as response to the human request, representing natural or generated effects", and on the other hand, to find their rich "information content" – useful for "the knowledge and understanding of the anatomy and physiology of our planet" – they have to be "detected, identified and deciphered".

But, to pick another assertion of my distinguished Professor – from the same text –, „both the detection and the identification, and deciphering and interpreting of the Earth's messages represent difficult tasks through the physico-mathematical, technical-instrumental and geonomic-conceptual problems, which they raise and ask to be solved".

³ These rows, printed with Bold & Italic letters, constitute the paper's "motto", as well (written in Romanian on front page 43).



... The synergism in the geonomical researches is right this multi- and mostly interdisciplinary cooperation that is initiated just from the beginning of the investigation process and it is developed along all the way... Singularizing for geophysical research – which represents the geonomical research category in which the synergism has been initially exhibited of being better organized –, it could state the synergism does not signify, then, the final integration of some partial results having been individually obtained by each discipline apart (albeit from its point of view they have a final character), therefore, it does not mean an "integrated" or a "complex" interpretation. It represents an interactive research assembly in all the phases of the process having been developed for the multilateral study of the research subject ...

(L. Constantinescu, 1992 – *Synergism in geonomical researches*, p. 8-9; in Romanian)

Synergism in geonomical researches

Le synergisme dans les recherches géonomiques

Cover and a text fragment (translated from Romanian in English) – Address of Acceptance to the Romanian Academy, given on 17 April 1992, in a public Session, with the Answering Word of Acad. SABBA ȘTEFĂNESCU and the Opening Word of Acad. NICOLAE CAJAL

(<http://danhconst.net/bibliografieLCproiect/Documente/pdf/1992-ACAD.pdf>)

In this framework, which is apparently general and which was defined a quarter of a century ago, there are however rigorous physical messages sent by the rocks of Earth's crust, carried by the magnetic minerals that constitute them, endowing the rocks with magnetic properties that allow for the transmission of messages.

Through the associated geophysical phenomenon – a natural field, the **geomagnetic field** – the availabilities and capabilities of the **magnetism of rocks and minerals** manifest themselves in a "vast" – multidimensional – "spatio-temporal complex".

On the one hand, it is exceeded, in both directions, the level from which the information is coming, in relation to that from where it is picked out – from the magnetic recording medium – the rock bearing the message, on the other hand, the temporal dimensions can be extended also in two directions, related to the moment when this is claimed to come off from its silence, expressing a more convincing ability and more varied aptitudes for restoring the past than for announcing the future.

Regarding time, however, there will be some more considerations after approaching the subject, at the other end of the paper, there, where at a certain point the past and the present had to stop and continuation through future was accepted.

Still relating to the overall image reproduced above, the messages brought by the **magnetic properties of rocks** are emitted spontaneously, representing natural effects. It can be added, however, that when, for example, man overcharges the environment, it is possible that the other case appears, that of the induced effects (yet, these can be placed in a different conceptual-phenomenological plan than that to which the opening references are linked) » (Rădan, 1998: p. 2).

... And the Prologue ends as follows:

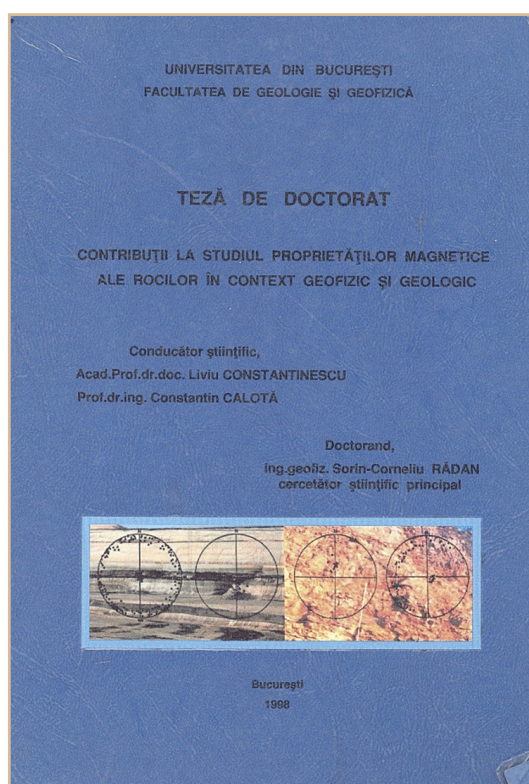
« Still remaining in the introductive framework suggested by the distinguished Professor's writings, from where I selected the opening quotation, as well as some elements of support for this **Prologue**, we open the way – from this moment – towards the challenging areas that the thesis author had the chance to reach, in order to detect and identify some of the Earth's messages, particularly the **rock-magnetic** and **palaeomagnetic** ones, various, and sometimes, baffling, even enigmatic, a continuous challenge, in fact, to be deciphered » (Rădan, 1998: p. 4).

Leaving out the 330 pages of text and figures of the thesis, in which, still, my Professor's influence is not missing, I will also stop a little over the *Epilogue*, with which, of course, the work ends. As a motto (Rădan, 1998: p.323), I chose, once again, a quotation from the same cherished book (Constantinescu, 1974):

"The Earth's messages, which geophysics must decipher, extend considerably the range of our investigation. Moreover, with their help, in some cases it is also possible to extend the investigation into the past. If we also take into account the fact that sometimes an extrapolation for the future can be done based on



Messages of the Earth in actual decipherings
(Constantinescu, 1974; First Edition, in Romanian)



Contributions to the study of the magnetic properties of rocks in
geophysical and geological context
(Cover of the PhD Thesis - Rădan, 1998; in Romanian)

situations observed as current stages of evolutions traced in the past, it results that the Earth's physical messages, well deciphered, can open for us the three gates of access to knowledge ... We must, however, accept that if the gate of the present – in the case at hand – is wide open, the one of the past is only partially open, and that of the future is barely open, and only intermittently" (Constantinescu, 1974).

The lines above represented for me an interesting and at the same time *challenging* support for adjusting to the subject matter of the domain approached in my thesis, to the (rock-) (palaeo)magnetic investigations, that I have actually continued over the next 15 years, and that I am still pursuing further ... Here are fragments of the *Epilogue* (Rădan, 1998: p. 323-326):

« In the context defined by the selected quote, the **magnetic properties of rocks**, by deciphering some of Earth's physical messages, have the privileged position of being able to open the three gates of access to knowledge evoked by the reputed professor in his engaging text.

The diversity and multitude of the underlined **rock-magnetic** and **palaeomagnetic parameters**, especially in the part dedicated to elaborating the theoretical support of my PhD thesis, can provide the keys for opening any of those gates.

From this point of view, it was even more important to specify their characteristics, defining them without ambiguities, and providing, at the same time, the units with which the magnetic quantities, applied in **rock-magnetism**, are measured correctly, in two assessment systems which still interfere, a matter that could also be observed in the present study.

The removal of confusions, errors or possible pitfalls – some of them concerning the relations of conversion between one system and another – is determinant in obtaining those keys, perfect in their details, and universal in their dimension, for entering inside the sphere of knowledge investigation, with a radius extending thus, spatially – from the central parts of the Earth's nucleus, to the boundaries of the magnetosphere, from the level of the electron, to that of the Galaxy – but equally temporally – from the geological past of the Planet to the present, and in some directions also towards its future (as I noted in the **Prologue**, there will still be references to **time** at this end of the thesis).

Consequently, the Earth's messages can be detected, identified and deciphered correctly and in detail.

Therefore, the **initial magnetic susceptibility**, either having the dimensions of CGS units, or of SI units, a volume susceptibility or a mass-specific susceptibility, it is a key with a physical capability of opening the gate of the present, in particular, although, and the more interesting, it has exhibited availabilities even for the gates of the past or of the future.

These capacities are demonstrated by numerous examples; many of them can be found even inside the content of the thesis. Moreover, if we bring in another characteristic of magnetic sus-

PARTEA I

PART I

PROPRIETĂȚILE MAGNETICE ALE ROCILOR ȘI ABILITATEA LOR DE REFLECTARE A UNOR CONTEXTE GEOFIZICE ȘI GEOLOGICE

(THE MAGNETIC PROPERTIES OF ROCKS AND THEIR ABILITY OF REFLECTING GEOPHYSICAL AND GEOLOGICAL CONTEXTS)

"Magnetism is one of the oldest of the true sciences although its remarkable properties have only recently achieved recognition and many of the ways in which it can be applied to a range of geological, geophysical and archaeological problems have still to be assessed and developed. Its unique feature is that it is the only geophysical property of the Earth that can be satisfactorily measured and evaluated throughout time.... gravity and electrical properties are transient features that leave no clear trace of their previous values. The strength and directions of the geomagnetic field can, however, be studied over archaeological, geological and even cosmic time-scales".

(D. H. Tarling - *Palaeomagnetism. Principles and Applications in Geology, Geophysics and Archaeology*, London, 1983).

"The magnetic minerals in the crust of the Earth carry a vast store of information about the history of the Earth. The use of magnetic materials for recording is thus a case of technology imitating nature. Solid-state physicists play similar roles in the fields of technological magnetic recording and rock magnetism. In the former the object is to develop materials with better indices of performance. In the latter the choice of recording medium is imposed by nature and the task is to assess the fidelity of the record and attempt to deduce by what mechanism it was imprinted. The research worker in rock magnetism is able to combine an insight into the properties of materials at the atomic level with an interest in phenomena on a global scale and ranging in time over hundreds of millions of years. Rock magnetism is therefore an interdisciplinary subject par excellence."

(W. O'Reilly - *Magnetic minerals in the crust of the Earth*, Great Britain, 1976)

ceptibility – the **anisotropy**, and the **magnetic fabric** defined by it, these abilities can be further extended and diversified.

The multitude of **magnetic susceptibility anisotropy parameters** provides the means of deciphering various **geological contexts**, but their intervention into the **geophysical contexts**, particularly within the (**palaeo**)**geomagnetic** ones, should not be neglected, as it remains, in a great measure, a problem which must be further comprehended.

The **natural remanent magnetisation**, measured in the units of the CGS system or in the equivalent of the International System (SI), also referring to the volume unit, or to the mass one, stands out through its **unique properties**; the fossil magnetism offers knowledge about a phenomenon that has disappeared, so it is a key used mainly to open the gate of the past, although with the same degree of success – albeit without being equally challenging – it can also be used in opening the gate of the present. The ability for the other temporal dimension, in a predictive meaning, was also tested, but it requires further an increased refinement.

The thesis is not lacking in examples regarding the deciphering of messages – which are also coming through the **remanent magnetisation** – from the magnetic recording medium, composed of **rocks**, respectively of **minerals**, opening thus another way of access to knowledge.

And if the **initial magnetic susceptibility** concerns a magnetisation induced in a rock, through the intervention of the geomagnetic field that exists at the place where it is formed, the **remanent magnetism** restores the geomagnetic field from the historical or geological past of the rock, starting with the moment of its genesis, when its main features – especially, the **directional** ones – were imprinted and then fossilized, without however neglecting the traces left by the other defining component of the palaeofield, i.e. its **intensity**.

Together, these two magnetisations offer another key – the **total magnetisation** / “**in situ**” – a key for opening a gate to the present, and for explaining certain anomalies, within the spatial distribution of the geomagnetic field measured at the surface, revealed, not seldom, by the magnetic mapping » (Rădan, 1998; p. 324).

Without reproducing the entire text of the thesis Epilogue, I will only select in what follows a few fragments from it, which bear the mark of my Professor's writing. Thus:

« The thesis' author hopes that, by being provided with the adequate keys guaranteed by the diversity of the **rock-magnetic** and **palaeomagnetic parameters**, and no less by taking advantage of their capacity to access the numerous riddles of Earth's physical messages, he went in through “the gate of the present – widely open”, while also managing to open more the „gate of the past”, and to a certain extent, the “gate of the future”, as well.

Regarding the latter, the access was stimulated, on the one hand, by the ability of the **environmental magnetism**, based

“... la magnétisation est une des propriétés physiques les plus complexes que le géophysicien puisse étudier dans les roches”.

(M. K. Seguin - *La géophysique et les propriétés physiques des roches*, Québec, 1971)

“... the use of remanent magnetisation as an indicator of the fossil record of the geomagnetic field extending back to old geological periods has added another dimension to the significance of the studies of magnetization in rocks.”

(P. V. Sharma - *Geophysical methods in Geology*, Amsterdam, 1976)

“Dacă ar fi numai aceste informații - printre « informații » sunt menționate: « inversări ale câmpului geomagnetic principal în trecut, cu menținerea axei dipolului imaginar; migrația polilor geomagnetici; deriva continentelor » - privitoare la Pământ care ar rezulta din descifrarea mesajului al cărui purtător este câmpul geomagnetic terestru, și încă magnetismul terestru ar contribui cu o pondere însemnată la documentarea geofizică pe care se bazează cunoașterea și înțelegerea anatomiei și fiziologiei planetei noastre”.

(L. Constantinescu - *Mesaje ale Pământului în descifrări actuale*, București, 1974)

(in Romanian; see below an English version)

“If there would be these informations only - among « informations » are mentioned: « reversals of the main geomagnetic field in the past, with keeping of imaginary dipole axis; wandering of the geomagnetic poles; continental drift » - regarding the Earth, which would infer from deciphering of the message whose carrier is the Earth's magnetic field, and still the Earth's magnetism would contribute with a significant weight to the geophysical documentation on which the knowledge and the understanding of our planet anatomy and physiology is based”.

(L. Constantinescu - *Messages of the Earth in actual decipherings*, București, 1974)

Cover page to the Part I of the PhD Thesis

(Rădan, 1998; p. 5)

on “the extrapolation to future of situations stated as present stages of some evolutions searched in the past” (Constantinescu, 1974) – to use another fragment from the motto of the Epilogue –, a capability demonstrated in the thesis through the Danube – Danube Delta – Black Sea geosystem » (Rădan, 1998; p. 325).

« ... More details will not be presented or repeated regarding all of the above. The list of targets that can be reached by extending the time frame and by a firmer opening of the gate of the future is nonetheless far from being complete » (Rădan, 1998; p. 325).

«... The firmness of widely opening the gate of the future and arriving at an understanding of most events in the life of the Earth – “which is **far from being silent**” – hangs, undoubtedly, also on the possession of such keys » (Rădan, 1998; p. 326).

The Epilogue comes to a close with the following lines, which represent also the end of my PhD Thesis:

« And if my Professor's recommendation “to stop, at least once in a while to see so the forest, whose trees often prevent us from contemplating it in the larger perspective of its entirety” (Constantinescu, 1974) was not completely followed along the thesis – although, even just the introductive considerations or the concluding comments which framed the main chapters, to which the interactive interpretative model from the work's end must be also added, can represent arguments which do not favour the alternative of **leaving out** the respective observation –, this generates another **challenge** for the future, for an additional refinement of the rock-magnetic, palaeomagnetic and magnetic databases which support the thesis.

Extending a previous remark², at this moment it must be accepted that **there is the risk that a doctoral thesis may never reach its ending**, a risk that the author of the present one experienced up to the proximity of the farthest limit.

Managing to avoid its exceeding, the (rhetorical) question remains open – these are, however, the intermittences of opening the gate towards the future – if this fact, its consequences mean a step further on the way to knowing new qualities of the **magnetic properties of rocks**, of some of the enigmas which are detected and identified by them in **geophysical and geological contexts**, in order to be deciphered in the more varied, but also comprehensive terms of the geonomic significances » (Rădan, 1998; p. 326).

Finally, I would like to express my desire of not having disappointed my Professor through the lines of this essay that is intended to be a modest contribution to the **Tribute** which is addressed to him now, at the passage of a century since his birth. As I wrote in the very beginning, the responsibility is immense when the feelings and the thoughts generated by the nearness of such a personality have to be transferred into words, which need to preserve their consistency and sensibility. And such an undertaking becomes even more complex when faced with the chance of having known him directly, as just at the half of the centenary marked today, I was his student (1963 – 1968) at the Geophysical Prospecting

PARTEA a II-a

PART II

STUDIU DE CAZ: PROPRIETĂȚILE ROCK-MAGNETICE ȘI PALEOMAGNETICE ALE SECVENȚELOR DETRITICE CU ALTERNANȚE CICLICE DE LIGNIT - ARGILĂ PLIOCENE DIN VESTUL BAZINULUI DACIC

(CASE STUDY: THE ROCK - MAGNETIC AND PALAEOMAGNETIC PROPERTIES OF THE DETRITAL SEQUENCES WITH PLIOCENE LIGNITE - CLAY CYCLIC ALTERNANCES IN THE WESTERN DACIC BASIN)

“The property of thermoremanence is the most important single magnetic property of rocks. Without it this book would never have been written and its authors probably not be engaged upon research in rock magnetism ”.

(F. D. Stacey & S. K. Banerjee - *The physical principles of rock magnetism*, Amsterdam, 1974)

“Finalement les mesures directes, trop limitées dans le temps, ne permettent pas d'atteindre à une loi générale d'évolution. Aussi ne nous reste-t-il plus qu'à partir, avec les archéo et paléomagnéticiens, à la conquête d'un passé magnétique plus lointain, sans trop nous étonner qu'une telle possibilité de ressusciter un phénomène disparu puisse exister ”.

(E. Thellier - *Le champ magnétique terrestre fossile*, Paris, 1966)

“In view of the paramount importance of the calibration of geologic time to understanding the rates of geologic processes, the contribution of magnetic polarity stratigraphy to the Earth sciences becomes self-evident ”.

(N.D. Opdyke & J.E. T. Channell - *Magnetic Stratigraphy*, San Diego, 1996)

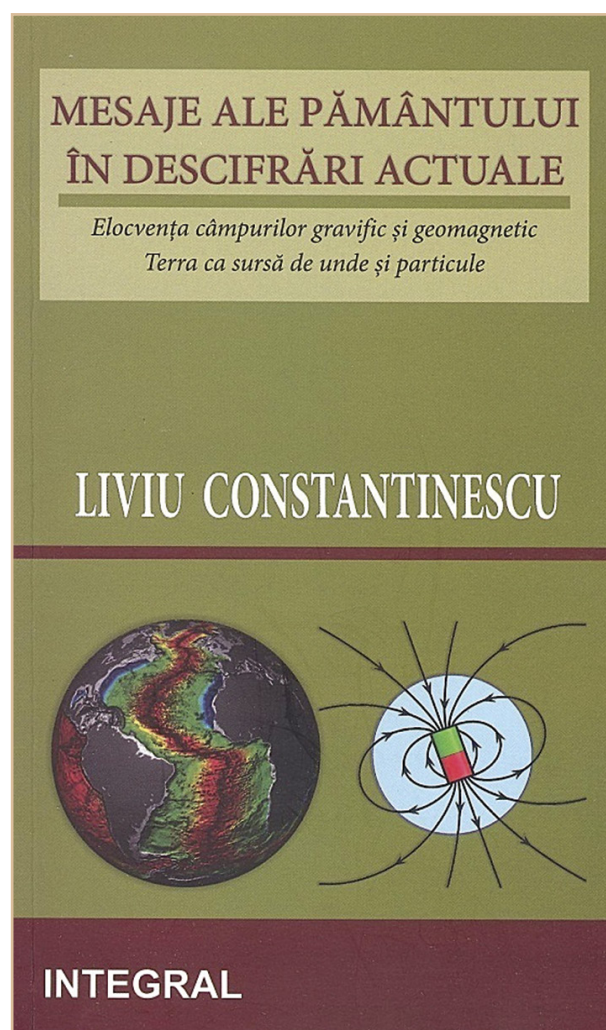
Cover page to the Part II of the PhD Thesis

(Rădan, 1998; p. 89)

Department of the Faculty of Technical Geology in the Institute of Petroleum, Gas and Geology, in Bucharest. Of course, the period that passed since then offers a diversity of *remanent images*, which could have been commented, and not only “reminded”. Anyway, here are a few of them: the precision with which the Professor was entering/going out to/from classes, according to his “pocket watch”, which he was placing on his desk, immediately after entering the classroom; the doctoral exams and proceedings, with ample and extensive topics, but with a strong “physical core”, adding also his specific writing style, elevated, and at the same time clear, concise (Rădan, 1978a,b,c); the recommendation that, for carrying out a complete documentation, one should also consult the specialty literature in Russian, finding a balance with the English and French literature, steps I went through during the first 4 doctorate years, which laid the foundation that allowed me to approach a new field in Geomagnetism or which at that time was only emerging in our country; the seminars of “*Applied Geophysics*” for PhD students (organized within the “Department of Geophysics”), where, in front of him, and alongside the other founder of the *Romanian School of Geophysics* – Acad. Prof. Sabba Ștefănescu, and the Head of the *Chair of Geophysics* – Acad. Prof. Radu Botezatu, we presented the results of our doctoral research; the meetings with his PhD students, in his office, for discussing the thesis progress; the “*Earth Physics and Applied Geophysics*” biennial symposia, when his rigorousness in terms of the presentation quality, and also for keeping the allocated time molded us and developed our aptitudes for taking part in the international/worldwide meetings which have followed, in my case, along over 45 years; the care that we had for an optimum wording of wishes (communicated by phone) on the occasion of his birthday anniversary, this special attention being actually more general, usually interfering in the course of our conversations, and which also had a constructive impact on us ... And so on ...

There are many other impressions that reflect moments of the meetings with *my Professor*, along a roadway of over 30 years ... And the locution “*Domnul Liviu*” (i.e., “*Mister Liviu*” expressed in Romanian language), used as an “addressing formula”, an indirect one, of course, which was appearing – and still does – in the conversations of those of us who dare to believe that we have “arguments” to consider today that we had a close (mutually, I believe) relationship with **Academician Professor Liviu Constantinescu**, hence only this topic can generate an “essay”...; a positive affective state, even a *friendly* one, is expressed by that locution, simple, unemphatic, but within the complex outline of the *Professor's* personality, defined by rigorousness, elegance, concision, intellectual brilliance ...

Coming back to the closing words, I would say that the **Tribute** which I am trying to dedicate to **Professor Liviu Constantinescu** becomes allowable, related to the *level* imposed by his personality, in the context of the *uniqueness* of its availabilities and capabilities, if the only disappointment



Messages of the Earth in actual decipherings
(Constantinescu, 2014; Second Edition, in Romanian)

that I have brought him remains that of delaying, *a bit*, the completion of the *Doctoral Thesis*, enough however, so that he was not able to read it any more ...

Thence, I hope that the readers will approve the approach I have chosen – of writing an *essay* supported by the insertion of some extracts from my *Thesis* – as a response to the invitation, which felt like an honour, to express memories, impressions, opinions generated by the chance that I had of being, for more than three decades, around the **Academician Liviu Constantinescu** – who was to me, in turn, *Professor of Magnetometry and Gravimetry*, head of the “*License Work*”, supervisor of *Doctorate* –, the chance of being therefore in connection with one of the most brilliant geophysicists of Romania and of the international scientific community, a founder of the *Romanian School of Geophysics*, in fact, with a “*parent*” of the *Romanian Geophysical Family*.

ACKNOWLEDGEMENTS

I thank *Dr. Eng. Marian Ivan*, Professor of Geophysics at the Faculty of Geology and Geophysics in the University of Bucharest (Romania), for the honoring invitation of writing a contribution to the *Tribute* that was dedicated as a homage at the *Birth centenary* of my *Professor, Academician Liviu Constantinescu*. Besides, the fact that this call was addressed to me by the current titular of the “*Magnetometry & Gravimetry*” course – held at the Department of Geophysics – gains a particular relevance, in the context of the essay’s finishing lines.

I tried to find the most appropriate English words to express my memories, opinions, impressions about my *Professor, Acad. Liviu Constantinescu*. While all these are interwoven with my feelings. This challenging undertaking took advantage of reviewing the original version of the manuscript by *Maria Rădan-Gorska, MPhil (Oxon) – University of Oxford*, who found the fitting – the ideal, I am daring to say – English words and locutions of expressing my thoughts and feelings. Also, my heartfelt gratitude, *Maria*, my niece, for your valuable suggestions, constructive criticisms, and inspiring comments. Without your thorough reviewing, the essay dedicated to my *Professor* would not have taken this final (semantic) shape.

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