

The Antimagnetic Field - A New Reality in Physics

- Original story of its discovery and theoretical statement

Prof. Asst. Dr. Hajdin Abazi

Faculty of Public Administration
AAB College, Kosovo

Abstract: This paper will present the trajectory of the discovery of a new natural phenomenon by physicist Naim Krasniqi, that is, the antimagnetic field. Though it seemed a special discovery, it will be transformed into a key to knowing the different reality not only of the magnet but also of the atom, the earth, the sun, the planets, the galaxies, and the entire universe; in other words, a new structure, hidden up to Naim Krasniqi, will be known, and the laws that applies to both the macro- and the micro-universe, so making the Einstein's dream - the union of physics, a reality. The description will present a *simplified* story of this discovery: how by a random observation of the different movement of iron dust (from the unknown impact of the new field, while other magnetic fields were present), with its innovative spirit, physicist Naim Krasniqi have discovered a new field, unknown to physics and other sciences - antimagnetic field; and the constitution of this knowledge step by step to its theoretical formulations. As well the law on the presence of the antimagnetic field within the magnetic field will be presented.

Keywords: the magnetic field, the antimagnetic field, the magnet, the iron dust, the law of the antimagnetic field presence

Introduction

This essay will show the trajectory of the antimagnetic field discovery, keeping in mind the certain conditions, real circumstances, traumatic experiences, and methodical attempts to constitute it as an empirical knowledge.

Magnets, respectively loadstones, have been known since antiquity (Netz & Noel, 2011, ch. 6; Gould, 1955, 427; Lachaisserie, Gignoux, & Schlenker, 2005, pp. 3-6), but more systematically and scientifically have been treated from the thirteenth century (Whittaker, 1910, pp. 7-8; Gilbert, 1893, pp. 313-314; Blundell, 2012, pp. 13-21; Maxwell, 1865) constituting the knowledge that science considers today as standard. Of course, deeper insights have been made, and that is well known. On the other hand, this does not mean that everything is known about the magnet and the fields it generates.

For example, no one has detected to date that another field can be created within the magnetic field (Abazi, 2019). Is this possible? If yes, which physics has not yet known, this would open new horizons unknown to science to this day to understand more deeply the reality.

It is the physicist Naim Krasniqi who claims that within the magnetic field, under certain conditions and circumstances, another field is generated. He has discovered this for the first time, becoming the knower of a new field, which he has called *antimagnetic field* (Krasniqi, 2019; Abazi, 2019). And he manages to convincingly demonstrate that this is an existing reality and factual.

But how did this discovery come about?

The description from the random detection to the theoretical constitution of the antimagnetic field, as it has a historical character to tell how the discovery itself happened, and to explain it, as well as, perhaps even more, helps to understand emotional crises and conceptual breaks, overturn of beliefs and fluctuations in the perception of the reality of their discoverer physicist Naim Krasniqi. Likewise, by showing this, one will understand how a perceived sensation becomes a scientific fact as Ludwig Fleck has elaborated since 1935 in his work *Genesis and the Development of a Scientific Fact* (Fleck, 1979), by defining to clarify the meaning and reality of the antimagnetic field.

From the scientific point of view, this approach is probably a standard of real behaviour in practice, and it is unique to the philosophy of science to understand how scientific facts are made.

The purpose of this essay is to describe the discovery of the antimagnetic field, from the emergence of unknown phenomena, its recurrences and experimentations to theoretical formulation.

Some clarification

1. Both *the magnetic field* and *its emanates* (from the north magnetic pole (N) and enters the south magnetic pole (S)) as well as *the magnetic dipoles* in this paper are taken as current physics knows them, for their

meaning will change with the change of the internal structure of the atom, which structure has been explained by physicist Naim Krasniqi (2019).

2. *The magnetic poles* are taken as current physics knows them (until Naim Krasniqi's 2019 publications) for purpose of easier understanding of the antimagnetic field.

3. Likewise, as the explanation follows the trajectory of discovery from the particular case to the theoretical formulation, wherever the word "working key no. 22 "or even" iron plates "has the meaning of" ferro-magnetic material "as a more general term that could replace the two specific terms, but which have been retained for the sake of originality of discovery and to reflect the course of discovery.

1. How was the Antimagnetic Field Discovered?

1.1 A random observation and conceptual shock

Based on the history of science (Dreyer, 1906), the ways of discovering new phenomena are different, but can be said to be mainly two: one, when the scientist is dealing with a particular problem and is looking for a solution – there are many such examples like Archimedes, when discovered where he did not expect the explanation of the volume measurement of irregular shape bodies (Smith, 1923, pp. 108-115; Hughes, 2005) as well Galileo (1880) as he studied the celestial bodies and had the telescope tested through images of distant objects in the city which were exactly the same as those seen closely and the same should be with the celestial bodies (e.g., the moon); the other way, when scientist does not seek revelation but meets it by chance, there are plenty of examples here too, but as an illustration it is enough to mention a case known as X-ray discovery by Wilhelm Roentgen (1896) who was experimenting with something else and accidentally discovered them.

The discovery of the antimagnetic field is an random one, but one that will change, enriching, our understanding of reality. "The antimagnetic field," writes physicist Naim Krasniqi in a correspondence (16.09.2019), "I have neither looked after ever thought of it". Coincidentally, it appeared while he was working on building a magnetic turbine, for which he now holds an international patent.

Winter of 2013. *Naim Krasniqi has physical vocation but he was preoccupied with engineering aspects and especially with innovation in the field of magnets, mainly focused on innovative design of the magnetic turbine and then even of the magnetic motor.* He was just doing some innovative experiments on his project of the magnetic turbine, when on the desk, which was full of magnets and other elements (aluminium, bronze), it was completely inadvertent that a working key no. 22 (Fe) fell down on a magnet located on the desk; the key (Fe) fastened to the magnet. As a matter of fact, it is not known whether it fell from the plate to the wall where he held the keys, or it was thrown by him on the desk. Such acts were often triggered, either by the vibration of using the various tools that made the keys fall from the tiles to the wall where they were hung or by swirling the keys without exhaustion or failure in any segment of experimentation.

This would have been a very trivial event, if not a strange act to be detected this time: "my eyes noticed a movement," writes physicist Krasniqi in the above correspondence, "something went from my side to the opposite". *This was an experience, a sensation quite unknown; indeed, it was the turning point, the moment when one saw an act that would then mark a remarkable breakthrough.*

But how did the physicist Naim Krasniqi perceive that sensation? He writes: "I thought it would be some spider that moved, probably scared of falling off the key. I saw once more if it was moving again. But I didn't see any spider. I said to myself: "It just appeared to me, but there is nothing to move". There was nothing on the desk except for pieces of different magnets and other work items - no living thing.

Upon being convinced of this, he took the key no. 22 (Fe) to place it on the nail on the plate adjacent to the wall. On that occasion, he noticed that something was moving again, as before, on the desk, only now toward him, in the opposite direction to before.

He experienced a distress and his heartbeat increased. Something was wrong. Something strange was happening. He looked again and saw no living being moving.

Shocked by not understanding what was happening, he threw the key (Fe) back onto his desk. And, again, he saw something moving, in the opposite direction to the last movement, that is, moving away from him.

It was a frightening movement, resembling beings unfamiliar as to science-fiction films, that are indistinguishable but somehow detectable as moving. This time he saw something moving that *stopped in a certain place*. He took a wooden stick and touched that something that moved. To his surprise, it was not a spider or any other living thing, but it was *iron dust* on the desk (from earlier engravings he had made to construct the magnetic turbine).

Driven by innovative intuition, the action was repeated two more times, and the iron dust moved again as before (coming toward or coming away) depending on whether the working key no 22 was placed on or removed away from any of the magnet poles. This caused him a traumatic experience, since *it was something strange, unknown, inexplicable, and impossible under the laws of physics, as he had learned during the*

university studies and are still valid in physics. "Removing iron from the magnet," writes physicist Naim Krasniqi, "the laws of physics do not recognize it. According to these laws, no matter that is the iron dust, iron particles get magnetized and always stick to the magnet. " If the laws of nature were saying so according to physics, and they were supposed to be as such, then what was happening, why he was seeing such actions ... or by the many hours of intense work he had begun to imagine things in a distorted way. Maybe was hallucinating, and he was seeing non-existing things. It was a conceptual shock that made the world collapse as Thomas S. Kuhn (1970, pp. 134-135) would say, the reality to distort and see things that only disturbed can experience.

The physicist Krasniqi make a call to his wife and told her that he was not psychologically well, that he was seeing things moving that are neither spiders nor living things. The wife said that this comes from exhaustion, and when she was tired to her too seemed to move things in the kitchen, "so leave the job and come home, or we have to come to you and take you from the workshop". "The truth is," says physicist Naim Krasniqi, "my wife had never seen things move when they hadn't, but she said so to me to calm me down. It helped me mentally because I thought that I, from exhaustion, was experiencing things warped, as they are not in reality. Really, she had been scared that I would have dizziness from exhausting work."

He had made all his innovative engagements under the laws known by physics, which he regarded as uncontested, and from what he had observed he had thought the worst of himself: that he had been foolish, that *he was seeing things which did not occur, actions totally contrary to the laws of physics which he believed to be true (according to which the magnet attracts iron particles)*. "From long-time experimenting," thought physicist Naim Krasniqi, "I'll have it. My mind is scaling, *I am seeing things that cannot happen, things that no one has seen or ascertained to date.*"

With many doubts, distrustful and afraid of going crazy, he went home, eager to relax and distract from that terrifying experience of what he thought to have seen. *Convinced that it was not possible, he had only one explanation: the mind, by the burden, was perceiving non-existent things.*" (The traumatic aspect of experiencing the perception of the unknown is elaborated elsewhere (Abazi, 2019). "If this were to continue, I would have to consult a doctor."

1.2 Ascertaining of the strange behaviour of the iron dust

For several days he stood at home with his family, forgetting what he had thought has seen. He told his family that he wanted to rest a little, because of overwork. After had calmed down a bit and realized that even the psychic tension had somehow gone away, he began to change his mind. Although when he left his workshop the last time, he had thought he would never go back there, fearing it was close to the psychic limits and could get worsen.

Now, after a few days' rest, he was recuperated and began to feel the lack of his workshop, because *the innovation* - where are involved various problems and research to find solutions such as, e.g., making of magnetic turbine and magnetic motor, *is in the soul of Naim Krasniqi; he is passionate and committed to it*, not just as a profession. He could not forget what he saw some days ago: he had overcome somehow the trauma and gone the other side: *he had begun to think about how it was possible and whether the iron dust could move away from the magnet - if so: why?* That Naim Krasniqi knew with certainty according to what he had learned from the science of physics was that *the magnet attracts iron, and so does the iron dust. But he had never read to the contrary. Something was wrong, something fundamental.* A very powerful curiosity was tempting him to challenge this perception.

He felt unsure, however, to go to his workshop alone. He needed to be with someone close, trustworthy and that wouldn't divulge him - even if it was madness. And a better person for this than his wife he could not have. He persuaded her to go together. After opened the workshop door, he decided to touch nothing. There were magnets, various elements, and working key no. 22 (Fe) (which was fixed to him as the cause of all the shock he had experienced). Everything was as he had left it the last time he was there. He took a picture of his desk without touching anything and nothing changed.

Soon after, the decisive moment came, the moment full of anxiety and horror, the moment of confrontation. "Hajrije," he said to his wife, "look now and tell me what you're seeing!" Naim slightly removed the working key no. 22 (Fe) from the magnet. "Did you see anything?" He asks in awe because from her answer would depends everything, though she didn't know it. "Yes," she replies, "when you removed the key from the magnet, the iron dust came close and climbed to the magnet." "Are you sure," he asked to assure himself. "Yes, I saw it with my own eyes!" she replied. "Now," the physicist told her demanding attention, "I'll put the key where it was, above the magnet, and you, Hajrije, tell me what you're seeing!" She stared at the experiment desk as Naim put the working key no. 22 (Fe) above the magnet. The iron dust moved again, but now in the opposite direction to the magnet, moving away from it. "Iron dust moved away from the magnet, I see that," Hajrija replied. She thus became *the first witness of the unknown phenomenon of physics.*

The assertion he received from his wife made the physicist Naim Krasniqi realize that he was not crazy, that *he had indeed seen the movement of iron dust, sometimes away and sometimes closer, depending on whether the working key (Fe) was put over the magnet pole or turned away.*

He felt that the world had stabilized, his being became vertical again, he felt alive and secure, realizing that he had indeed seen that strange and inexplicable behaviour of iron dust.

His gladness was so great that, perhaps, such a thing only Archimedes experienced when he made his discovery, and, astonished by that observation, he emerges naked from the public restroom and runs through the city to his home to write down somewhere what he had seen, all the while shouting, "Eureka! Eureka!".

2. The New, Unknown Language of Nature

2.1 Nature is speaking in a different language

Naim Krasniqi had repeated his action, placing the working key no. 22 (Fe) above the pole of magnet and removing from it, the strange behaviour of the dust was the same. He had realized that *this was no accident; the behaviour of the dust was always the same with respect to the magnet, depending on whether the working key no. 22 (Fe) was put above the pole of the magnet or removed.*

But *this action*, according to the current laws of physics on the magnet, *was not supposed to happen.* Such an action was not even mentioned nowhere, and *no one had noticed such a behaviour of removing iron dust from the magnet.* Physics used to say that magnets attract iron because of the magnet's attractive properties and then get magnetized the iron or even the iron dust. Magnetization (Gutfleisch, 2001, pp. 3719-3722; de Boer, F.R., 2001, pp. 5013-5018; Jackson, 1962, pp. 154-167) was known and accepted, ascertained by science, and easily ascertainable by anyone possessing a magnet and a piece of iron or iron dust. *Scientists believed that this was the language of nature, this was the behaviour of iron or iron dust when it was so close as to be influenced by the attraction power of the magnet.*

No one was told or had written that the magnet had another property, that of removing iron or iron dust as long as the magnet remains magnet and is not demagnetized (Osborn, 1962, p. 351; Helmenstine, 2019; Morgan, 2018) (through interventions such as with high heat, electrical circuit etc.).

That a magnet remains a magnet and show opposite phenomena, this was first and only observed by physicist Naim Krasniqi. Just *put over the pole of the magnet (while the other pole is rested over an iron plate) a piece of iron (working key no. 22) and the iron dust goes immediately away, so this action was unknown by the laws of physics. But here it was. Then what?*

The observation of the behaviour of the iron dust, apparently, though completely random, was only the initial cause that would inadvertently cause the physicist Krasniqi to embark on a transformative cognitive swirl he had never intended. Well, he couldn't be more pleased with the ascertaining of the unconventional behaviour of iron dust. He had already been asked numerous questions to understand why it was happening, how it was possible, what was happening, what was changing in the magnet, and many questions that needed to be answered.

The sensation that Naim Krasniqi perceived was something very special: *nature had begun to speak to him in a different language. This was a language unknown to physics, though this science had been in existence for over two thousand years, since its establishment as a discipline by Aristotle with his work *Physics* (Aristotle, 1984, pp. 699-978). It is a new language. An announcement unknown until now, but real, existing and true. Nature had revealed a new part of herself, just as she had never done it before. As it had never appeared to anyone, appeared to the physicist Naim Krasniqi.*

After a conceptual shock that was near to shock him even psychologically, Naim Krasniqi realized that he had perceived a part of nature, a different behaviour and completely unknown by science. *Nature had appeared to him and he had distinguished it, without knowing what it was announcing.* It required as much attention and approach as possible. *He realized that it would take a lot of work until he realized what nature had shown him, the unknown labyrinths of knowledge, of his discovery.* He felt compelled to put in the centre the engagement with *this phenomenon, to conceive it, and went as far as it takes him* (as did Parmenides, 1892), wherever this random discovery of the strange behaviour of iron dust, which instead of the approaching or staying attached to the magnet, it moved away as soon as a working key no 22 (Fe) was placed above the one pole of the magnet (while the other pole was placed on the iron plate).

2.2. Experimentations, same behaviours and the ascertainment of the new unknown phenomenon

Getting acquainted with a new phenomenon, previously unknown, and even more so if it conflicts with the laws of physics, laws which were all over and accepted as true by all physicists including Naim Krasniqi who likely believed in them, it was only the first step: *The appearance of the miracle and its observation. In*

order not to remain superstitious, and unexplained, to go further, to fully understand *the causes that make the phenomenon occur as it happens, how it is possible, what is changing, why and how the magnetic field changes.*

Science has a very specific nature (Bird, 1998, pp.1-8), for it is not enough just to make figurative formulations, especially not physics, for it requires precise formulations, persuasive descriptions, to show the experiment clearly so that others can produce it (Bachelard, 1984, pp. 9, 41, 120-121, 133; Popper, 2002, 198,199). For if a behaviour occurs only once and it cannot be repeated (at least through experimentation by field researchers), then it remains mystique and not a science, not an empirical fact. And *science is science only because even the most fantastic assumptions, to accept them as scientific, try to make them experimentally ascertainable as empirical entities* (Popper, 2002, pp. 88-94, 268, 442-478, 463).

Such a work, a very challenging one, awaited the physicist Naim Krasniqi, but it seems that, from his innovative work, he was seasoned to face difficulties with perseverance in finding answers, respectively solutions.

He began critically to examine his observation, to create laboratory conditions, i.e. to exclude other factors that might have contributed to make the phenomenon he had discovered happen as a deviation. Experiments repeatedly revealed the same unusual and totally weird behaviour of the iron dust. During these experiments, the physicist Krasniqi noticed that *the magnet was located above an iron plate (Fe) when the working key (Fe) had fallen over it.*

Considering all this, the experimental conditions can be formulated as follows:

Simplified experimental conditions (1) and the outcome:

Under one pole of the magnet is placed an iron plate (Fe) and above the other pole of the magnet is placed another iron plate (Fe) (and keep in mind that more than one magnetic field needs to be present). Once the latter is done, i.e. when the top plate is placed over the magnetic pole, the iron dust which is fastened to the magnet – will remove; and vice versa: when the iron plate is lifted above the magnetic pole, the iron dust is again pulled from the magnet and stuck to it. This behaviour of the iron dust occurs and is repeated every time an iron plate was placed on the underside of the magnet pole, and on the upper side of the magnet pole another iron plate was put in or removed. That is, it was the placement of the plates above the magnet poles that caused the iron dust to be removed from the magnet, and the removal of one iron plate from the magnetic pole that made the iron dust move toward the magnet and stick to it. - *This change was observed for the first time and the only by the physicist Naim Krasniqi to date.*

This repetition of the movement of iron dust, under experimental conditions (1) above, had made the physicist Krasniqi realize that *it was not a matter of randomness but of a phenomenon* which had to be studied in its entirety and in all its complexity, without even thinking how far the pursuit of the discovery trajectory would go.

3. Theoretical Constitution of the Discovery

The five different observations of the physicist Naim Krasniqi

3.1. What causes the iron dust to leave the magnet?

Physics postulates that the magnet has attractive properties to iron (Whittaker, 1910, p. 56; Shua-Hua, 1954, pp. 175-196), and thus to iron dust, and this is believed to be true in the conditions and circumstances as described by the law on magnet's attraction. So, each iron, or its derivative (dust, particles, wires, etc.), when approaching a certain distance to the magnet, the magnet pulls towards itself and compresses to its structure - this view was embedded in the conceptual network of magnets to almost all physicist including the physicist Naim Krasniqi.

But *what made the opposite action happen?* What makes to happen that had observed Naim Krasniqi: the removing of the iron dust from a magnet? *How is it possible for a magnet, which, according to physics, pulls iron particles, the same magnet to push away them?* According to the laws of physics, a magnet has only pulling away properties, also bringing iron closer to the magnet until sticking to it.

What the physicist Naim Krasniqi has observed has nothing to do with the well-known phenomenon that the like poles of the magnet repel one another, which is known by the science of physics since it has been ascertained by André-Marie Ampère (Blundell, 2012, p. 31) in the 19th century. *It's something entire distinct, completely different.*

The iron dust that behaviour strangely does not get the like polarization as the magnetic pole by creating an own entity (body) separate from the magnet (and if that were the case, it would be a new phenomenon, because a given magnetic field would be able to create the like poles of the magnet as a separate entity and thus cause the two poles to move away with equal loads created by one pole; the latter has not been observed by anyone and has not been ascertained to date), but the iron dust that sticks to the magnet becomes

one with the magnet, because it is magnetized as an entity identical to the magnet. According to the dominant concepts of physics, the magnetic like poles always repels, remove, postponement and distancing each other to such an extent that they can no longer be affected by each other (and this goes to the extent that it has the force to extend what is known as a magnetic field of two identical repulsive poles, a extension which is not infinite but is limited).

What Naim Krasniqi had observed had nothing to do with what physics had to say about the magnetic like poles, because, in fact, it was an action that affected the magnet itself while the magnet poles remained unchanged. That is to say, *it should be ruled out that the iron dust, during magnetization, can be transformed into a separate entity by returning to the like magnetic pole, resulting in the behaviour of two identical magnetic poles*; it is excluded because if this were the case, then repulse would occur continuously, or even that the iron dust would slide off the opposite magnetic pole and join with it. In fact, *at the present stage when everything is assumed to be in conformity with the current concepts of physics*, it's not about the magnetic poles themselves for they are taken as unchangeable, and the magnetization of the iron dust by becoming one with the magnet does not turn into a magnet with like poles that, due to the same load, move away from each other. This is excluded.

Indeed, *something else happens*, and that's exactly what Naim Krasniqi's discovery is about. *Placing iron plates below and above the magnet poles (according to 1 above) does not affect the magnet poles*. This does not happen, and yet the strange behaviour of the iron dust is repeated. As initially, whenever the iron plate (Fe) was placed above the magnetic pole (according to 1 above), the iron dust begins to move away from the magnet at a certain distance, and vice versa, whenever removed the iron (Fe) plate from the magnet - the iron dust again moved in the direction of the magnet.

Of course, other circumstances must also be kept in mind. The physicist Naim Krasniqi writes: "On the desk there were various plates of magnet, of bronze, of aluminium, as well the iron dust from previous engravings. An aluminium plate had accidentally been placed between the magnet plates, which prevented the iron dust from sticking to any other magnet, and the pushing/ pulling movement of the iron dust towards the magnet remained unnoticed by the placement of the magnet plates on the magnet poles. The magnet above which had fallen the working key no. 22 (Fe) had been placed on another plate of iron" (experimental conditions according to 1 above). Hence *it was precisely the placing or removal of the iron plates (Fe) on the magnet poles that had made something happen to the magnet itself, which made the iron dust to remove or to be attracted*. In other words, if there was only one condition fulfilled (from 1 above), that is, if there was only one plate placed above any magnet pole, that would not happen - also the iron dust would not remove from the magnet; only when both iron plates were placed above the magnetic poles then and only then did the movement of the iron dust occur as it had happened, meaning it was the magnet itself that removed the iron dust from itself. *It seems that placing the iron plates above the magnet poles, as a circuit enclosure, creates something new, and causes the magnet to slightly change its properties*.

1-st ascertainment:

The magnet placed on one iron plate (Fe) from one pole, and when over the other pole is placed on another iron plate (Fe), as was the case with working key no. 22 (Fe), the magnet removes the iron dust up to a certain distance and then the iron dust stops and stays there for as long as the state remains the same, i.e. so long as both iron plates (Fe) remain on the magnet poles.

Removing any iron plate from any magnet pole, thus, causes its pulling power near to magnet to be reactivated, that is, pulling the iron dust on itself until it attaches to it (the magnet).

So, these behaviours of removing the iron dust from the magnet and pulling to the magnet occur continuously, always and whenever two iron plates are placed each above each magnet pole, then the magnet removes the iron dust from itself and makes it move in the opposite direction to the magnet; and each time one of the plates is lifted above one magnet pole, the magnet pulls the iron dust back on itself.

This means that the reason for the pushing or pulling of the iron dust by the magnet is the placement or displacement of one of the plates by any magnet pole. It follows that if there is only one iron plate above any magnet pole, nothing happens, that is, *only when on each pole of the magnet is placed by an iron plate, then and only then does the phenomenon of the motion of the iron dust occur - being pulled or pushed by the magnet*. - This is the first observation of the physicist Naim Krasniqi.

3.2 What is changing in the magnet?

If the magnet is characterized, as various theories of physics say about the magnet (Whittaker, 1910, p. 56), with the attraction of iron (that is, iron dust), then this action must occur continuously, also always and in any circumstance *a magnet* must attract, in this case, the iron dust.

But, as Naim Krasniqi has observed, *that is not always the case*. So, the magnet does not always attract iron dust, although the magnet is said to have attractive properties to iron. In fact, *it is enough to change a circumstance, for example to put on each the magnet poles an iron plate (Fe), the antimagnetic field is activated by the magnetic field of that magnet itself*. But what makes it so unusual and so special is that *placing the iron plates above the magnet's poles makes the magnet itself remove the iron dust from itself*. In some unexplained way until the discovery of Naim Krasniqi, *the magnet itself pushes away from itself the iron dust*.

This strange and unknown change from today's science, which it cannot even explain, is a creation of a very special state, affecting the very essence of the magnet as it is known to this day. Not being random and exclusionary behaviour, rather being, under experimental conditions (according to 1), *orderly and repetitive action, expresses an unknown reality to date, a fundamental change of magnet property, unveiling a new character*.

It appears that placing the each iron plate (Fe) above both poles of the magnet, and only when they are placed above both poles and stand at the same time above the poles, *does not only neutralize the attractive properties near the magnet, but furthermore, makes it change, turn to its opposite, to a repulsive property*. The magnetic property changes by turning into a counter-property: from the known characteristic of the attraction of iron dust, to the unknown characteristic of the removal of iron dust from the magnet up to a certain distance.

It seems that the magnet has fetishist properties, in the sense that it can display only one property, while potentially containing the other property, which under certain conditions (as in experimental conditions 1) displays it, and when these conditions and circumstances that cause it be eliminated - this new property is extinguished. To activate this dual magnet property, it is sufficient to place an iron plate (Fe) above each pole of the magnet; to deactivate it is enough just one of the plates to move away from any magnet pole and restore the other property of the magnet - pulling iron dust on the magnet, as well as placing the removed iron plate above the other magnet pole (such as to the experimental conditions of 1) and - the iron dust is removed from the magnet. Thus, the magnet, under the influence or not of the iron plates above the magnet poles, changes its properties: it sometimes acquires the attracting property of the iron dust, at times it receives the removing property against the same iron dust.

2-st ascertainment:

The magnet has double properties: the attraction is known by current scientific theories, the other - the removal is latent or potential, somewhat camouflaged properties. It follows that *the magnet's attractive property is not exclusive, it is not the only one*. The magnet, under the influence of certain conditions (such as placing a plate above each magnet pole) can simultaneously activate the potential property. This means that, in fact, the magnet always has this dual property, but *physics has not come to know it to this day*. This dual property (in the Aristotelian sense: one actual and the other potential), under the influence of relevant external factors (such as two iron plates placed above the magnet poles), makes the magnet to activate the dust *pushing property* of iron, or when one of the external factors is eliminated (one of the iron plates is removed from any pole of the magnet), then the magnet restores the *pulling property* of the iron dust. - This is the second observation of the physicist Naim Krasniqi.

3.3 What happens to the magnetic field?

The strange behaviour of iron dust, in the specific sense of its removal from the magnet, and the alteration of the magnet's attractive properties, manifesting a double and opposite character, is only an outward, observable, visible and possible manifestation easy to be ascertained.

For such dual behaviours to occur as they occur, there must be something more. The change of properties, by certain factors (experimental conditions 1), changing from pulling to pushing which makes the iron dust behave in accordance with it, there must be something that makes or causes this change.

As the physics understands so far, the magnet cannot change, that is, it cannot naturally sometimes be magnet and sometimes not, then something else must change. *This change must be related to the magnetic field and be its direct consequence*. If the magnet does not change then it must somehow change the magnetic field itself (according to the current conception of physics).

If this change happens and based on experiments it seems to happen, then it is, indeed, *the magnetic field itself that changes. The change must be made therein, in the magnetic field*.

And, based on the pushing or pulling of the iron dust to the magnet, it can be said that this change in the magnetic field is such that (under experimental conditions 1) it can be made but can also be undone. However, whenever and wherever it occurs, the change occurs due to the influence of external factors (such as placing the iron plates above each magnet pole). The placement of these plates above the magnet poles directly affects the magnetic field, causing a change with a previously unknown effect - with the iron dust pushing effect.

3-rd ascertainment:

The change, that is, the cause of the strange (pushing) behaviour of the iron dust by the magnet and which causes the magnet to change a known property of the magnet (its attracting force) by rousing the pushing property, derived from the magnetic field, and is the result of its changes under the influence of iron plates placed on the magnet poles. That is, the magnetic field itself changes somehow. So what changes is the magnetic field itself, a change that causes a different, unknown, but constant action (pushing property) of the magnet under certain conditions like the experimental one (1). - This is the third observation of physicist Naim Krasniqi.

3.4 Generating a new field within the magnetic field

After much experimentations, Naim Krasniqi realized that *the change* that occurs in the magnet field, that makes it change its hitherto unique characteristic, *occurs within the magnetic field*. Placing an iron plate above each magnet pole has a constant effect on the magnetic field itself, causing it to react differently whenever the plates are placed above the poles.

This change, though caused externally, that is, by the placement of an iron plate above the magnet poles, *comes from within, exactly from within the magnetic field*. Even more precisely, *something essential changes within the magnetic field*.

While the direction of the magnet is taken for granted, then - *the change directly affects the field generated by the magnet*. That is, *within the magnetic field, whenever an iron plate is placed above the magnet poles, a different, new field is generated*. This new field does not eliminate the magnetic field. The magnetic field remains as long the magnet remains.

The field generated within the magnetic field is not passive but active, in the sense that it changes the exclusive property postulated by today's physics on the magnetic field - the attraction property (to e.g. iron dust), rousing the other property - the pushing one (to e.g. iron dust) by the magnet up to a certain distance. Unless this change occurred, that is, unless another field was generated within the magnetic field, the dust would remain attached to the magnet.

This field generated within the magnetic field is not an antifield but is a field that operates within it. When conditions are fulfilled (e.g. placing iron plates on the magnet poles) *a certain field is generated within the magnetic field, without destroying it, without eliminating it, not even affecting its existence - it just pushes it farther from the magnet*. The magnetic field continues to exist, even when another field is generated inside it. It is precisely the generation of this new field within the magnetic field that makes the magnetic field change its attraction properties. *This field within the magnetic field is a new field, unknown to science, and first discovered by Naim Krasniqi*.

4-rth ascertainment:

Under the impact of placing the iron plates on the magnetic poles, *a other field is generated within the magnetic field*. This new field, once generated within the magnetic field, is active and, as long as it exists, it operates continuously and without interruption. *This new field is a field of its own, but it is not antifield, because it does not eliminate or neutralize the magnetic field and does not in any way affect the actual existence of the magnetic field*. - This is the fourth observation of the physicist Naim Krasniqi.

3.5 What is the characteristic of the new field within the magnetic field?

The magnetic field, always according to the concepts that currently dominate physics (Whittaker, 1910, p. 56)), continues to exist in every magnet, regardless of the conditions and circumstances, since it is not abolished from the magnet. But, as stated above, *a different field is generated within the magnetic field* whenever an iron plate (Fe) is placed on the magnet poles. It follows the conclusion that in such cases, that is, *when on each pole of the magnet is placed an iron plate (Fe), there are at the same time both fields on a magnet - the magnetic field and the field generated within it. Under the conditions and circumstances when these two fields exist, they remain so until the conditions and circumstances that caused the field within the magnetic field change*.

Since the field generated within the magnetic field does not destroy the latter, and since the existence of this field within the magnetic field is not passive but active, that is, it acts and has a certain effect, which is expressed by pushing the dust of iron from the magnet up to a certain distance. The direct consequence of this field within the magnetic field is the changing of the magnet's properties in its vicinity: instead of pulling the iron dust until it is drawn by the magnet, it pushes whenever iron plates (Fe) are placed on the magnet poles.

It follows that the field generated within the magnetic field causes the magnet effect to change near the magnet. What is considered by physics as the main effect on the magnet - the property of attracting iron dust, is precisely this property that the new field generated within the magnetic field is depreciating, rousing an opposite

- pushing property. From this, the physicist Naim Krasniqi concludes that *the field created within the magnetic field is an antimagnetic field.*

According to the concepts still believed, the magnetic field draws the iron dust towards the magnet as the iron dust goes up for the magnet, and also because the iron dust is magnetized (reference) and in some way becomes an integral part of the magnet, as if it were even the magnet itself, though not really a magnet, but a magnetized iron dust, meaning that the magnetization is transferred to it by the magnet. Characteristic of iron is that it can be magnetized, but does not maintain this property permanently, also even after leaving the magnet; in this case, it can be demagnetized demagnetizohet (Osborn, 1962, p. 351: Helmenstine, 2019; Morgan 2018) (that is, to consume magnetization) and remain iron dust as it was in the previous state, i.e., not magnetized. The antimagnetic field does not completely change the magnet itself but generated within the magnetic field by the effect of placing the iron plates on the magnet poles, *dampens the pulling effect of the magnetic field in the vicinity of the magnet, activating the other - the pushing property.* The same iron dust that is pulled to the magnetic field as soon as the antimagnetic field is generated – *is pushed by the magnet up to a certain distance.* The antimagnetic field has the pushing force, that is, the removal of iron dust from the vicinity of the magnet.

5-th ascertainment:

The field generated within the magnetic field causes an opposite effect to the magnet effect known so far by physics, so it is an antimagnetic field, which causes the magnet to push iron dust from rather than to pull it, making the magnet, in appearance, to act as an antimagnetic. As a matter of fact, it is not that the basic character of the magnet changes, but this effect is made by the antimagnetic field generated within the magnetic field. *The iron dust is removed only up to a certain distance.* - This is the fifth observation of the physicist Naim Krasniqi.

4. The Antimagnetic Field

4.1. The antimagnetic field is a new field unknown so far

As in all the suggestions so far and in the following the concepts of physics on the magnet will be taken for granted, namely that it is two poles, the north pole and the south pole, and as a characteristic, these poles remain constant on each magnet, as also the direction of the magnet is assumed to be the same.

Depending on the focus of this discussion, *the change concerns only the magnetic field which only changes but does not vanish.* The antimagnetic field causes the opposite effect to the magnetic field effect, and rather than attracting the iron dust itself, *when the antimagnetic field is generated and under its direct impact, the iron dust moves away by the magnet up to a certain distance.*

The antimagnetic field is not generated in every circumstance, and that is why it has remained undiscovered up to Naim Krasniqi. It only generates when an iron plate (Fe) is placed on the magnet poles. In other words, *the antimagnetic field is not a field generated by the magnet itself.* It is generated under the impact of external factors such as when placed on each pole of the magnet by a plate of iron (Fe). *As long remains the factor that caused the antimagnetic field, it will be active the antimagnetic field,* which, in the given case, has a counter-effect to the iron dust, that is, causing it to move away from the magnet.

The antimagnetic field does not eliminate the magnetic field, it continues to exist. Otherwise, the iron dust would be removed continuously until it reached so far that the antimagnetic field would no longer have the power to push it further. But that doesn't happen. *The dust of iron departs only up to a certain distance, and there it stops, stays there: it neither goes further nor gets closer but remains in the same place, at the same distance, as long the antimagnetic field will exist, because it is just the antimagnetic field that keeps the iron dust at that distance, keeping it at a certain distance from the magnet.*

From above can be deduced the conclusion that *the antimagnetic field, being generated within the magnetic field, creates its own space by pushing the magnetic field. The antimagnetic field tends to expand steadily, removing from the magnet, after its capacity; whereas the magnetic field, which, under the impact and impulse of the antimagnetic field, swells, passing, as it were, to the periphery, at a certain distance, but which tends to constantly approach the magnet, inhibiting the expansion of the antimagnetic field.* That is, *there is a constant relation between the antimagnetic field that pushes the magnetic field, causing it to swell, and the magnetic field, which is pulls to the magnet, suppressing it.*

A general ascertainment:

The dual magnet field has made antimagnetic field to remain previously hidden and undetected when it is generated within the given magnet field, naturally under the pressure or action of external factors (such as iron plates put on each magnet pole). *The antimagnetic field is a new field, unknown to science so far, but it has been discovered as a reality and as an empirical entity. There is a permanent relationship between the antimagnetic*

field and the magnetic field, whenever they co-exist and wherever they co-exist: the antimagnetic field tries to push the magnetic field as far as it can, and the latter tries to get closer to the magnet. It is only the effect of the action of the antimagnetic field that causes the iron dust to move away from the magnet to such an extent that the antimagnetic field has the power to remove it, but it does not remove it without end, because, in the periphery, there is the magnetic field which draws iron dust and holds it where it is positioned. - The antimagnetic field as a new field, as a new reality is the discovery of the physicist Naim Krasniqi.

4.2 The visualization of the magnetic field and antimagnetic field

From what has been said so far, having regard to the pushing effect of the antimagnetic field and the pulling effect of the magnetic field, it is clear that *each of these fields, in interaction, have certain intensities, with given values depending on their size and strength.* Since the intensity of these fields is variable, then, in any case, certain measurements are required to determine exactly the intensity of each. This, being a technical work, is achievable (in principle yes, although there is still no means by which to measure the intensity of the antimagnetic field).

Physicist Naim Krasniqi has established his experimental work to the scientific standard. He placed an iron plate on each pole of the magnet (experimental conditions 1), thereby detecting the same pushing effect to the iron dust by the magnet, and the effect of pulling the iron dust on the magnet by removing one plate iron from any magnet pole; that is, *depending on placing a plate on each magnet pole or removing one plate from any magnet pole - the antimagnetic field is activated and deactivated.*

From this experimental experience, Naim Krasniqi has visualized the path of the antimagnetic field moving alongside the magnetic field. Of course, visualization of the antimagnetic field, within the magnetic field, requires advanced technology, but, in the absence of this, it can be presented in a simpler but meaningful way. This is what the following illustration, made by physicist Naim Krasniqi, expresses.

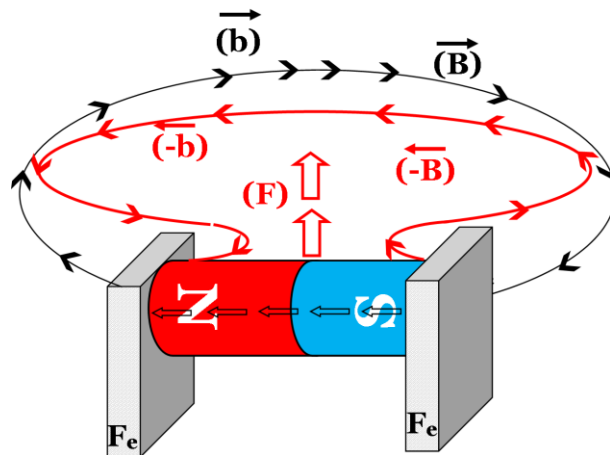


Illustration. The path of movement of the antimagnetic field within the magnetic field

What is seen in the illustration above is as follows. The red arrows indicate the path of the antimagnetic field within the magnetic field, while the black arrows indicate the path of the magnetic field. Both are generated by the magnet, the two poles of which are presented in blue (south pole) and red (north pole). The two plates along the magnet poles are of iron (Fe). *When an iron plate (ferro-magnetic material) is placed on each magnet pole, then and only then within the magnetic field does the antimagnetic field form.*

Based on the above illustration, the magnetic field is symbolically expressed by the symbol \vec{B} , whereas the antimagnetic field has by Naim Krasniqi expressed it by the symbol $\vec{(-B)}$.

4.3 The path of movement and direction of the magnetic field and the antimagnetic field

After examining and experimenting dozens of times from where had correctly ascertained the antimagnetic field, physicist Naim Krasniqi defined the characteristics of the antimagnetic field by comparing it with the magnetic field.

The definition assumes the direction of the magnet to be the same, in the sense that the magnetic needle will show the same direction of the magnet, both when it is just the magnetic field as well as when it is also the

antimagnetic field within the magnetic field. To explain the differences between the magnetic field and the antimagnetic field the direction of the magnet does not currently play any role since it remains the same.

Physicist Naim Krasniqi (2019) points out that *the magnetic field, as current physics knows it, changes its meaning completely by changing the structure of the atom*. But to make the antimagnetic field closer to the dominant concept of physics over the magnet he summarizes it as follows:

The path of the magnetic field movement \overrightarrow{B}

1. The path is the movement that the body traverses, in this case the body is considered the magnetic field that passes through a given path.

a. The path through which the magnetic field passes is not straight but curved, whatever its shape may be, and whatever it is - it is taken as a path.

b. The magnetic field emanates from the magnetic pole (N) and is scattered and enters the south pole (S).

c. The magnetic field moves from the north magnetic pole (N) to the south magnetic pole (S) (*black arrows in the picture*).

The direction of the magnetic field \overrightarrow{B}

2. The direction of the magnetic field indicates where the magnetic field is oriented.

a. The magnetic field emanates from the north magnetic pole (N) and enters the south magnetic pole (S).

b. Therefore, the direction of the magnetic field is oriented from the magnetic north pole (N) toward the south magnetic pole (S) (*black arrows in the figure*).

And the field discovered by Naim Krasniqi, that is, the antimagnetic field, he summarizes as follows (Krasniqi 2019):

“The path of the antimagnetic field movement $\overrightarrow{-B}$ ”

3. The path is the movement that the body traverses, in this case the body is considered the antimagnetic field that passes through a given path.

a. The path through which the antimagnetic field passes is not straight but curved, like the magnetic field, but regardless of its shape and whatever it is - it is taken as a path.

b. The antimagnetic field emanates from the lateral side of the magnetic pole (S) and (N). (*Red arrows in the figure*).

c. The antimagnetic field moves in the opposite direction to that of the magnetic field and tends to expand (inflate) the magnetic field as far as it can by concentrating in the middle, making the dispersion (expanding) of the magnetic field, and having a range of action many times larger than the magnetic field itself.

The direction of the antimagnetic field $\overrightarrow{-B}$

4. The direction of the antimagnetic field indicates where the antimagnetic field is oriented.

a. The antimagnetic field emanates from the lateral surface of the magnet (S) and (N). while its expanding starts in the middle of magnet.

b. Therefore, the direction of the antimagnetic field, namely the magnetic dipoles of this field, is oriented in the opposite direction to the magnetic field, namely the magnetic dipoles of this field. (*Red arrows in the figure*).

Based on the rules of physics, the path is the same in both cases. Because both the magnetic field and the antimagnetic field are in the same spaces around the magnet body, but while the magnetic field emanates directly from the magnet poles, the antimagnetic field emanates from the lateral sides of the magnet poles.

The magnetic field tends to stay as close as possible to the magnet body, while the antimagnetic field tends to push the magnetic field as far away as possible but is still assumed to be in the same path. It follows that both fields, the antimagnetic and magnetic one, circulate in the same spaces.

So, the antimagnetic field in all respects is opposite to the magnetic field, so these two fields move in opposite directions”

In this sense it can be figuratively stated that the space where both fields exist is like a two-lane road, and the directions to each of these areas are similar to two lanes of the same path, with lanes having opposite directions.

Summarizing all above theoretical aspect of differences, Naim Krasniqi (2019) writes:

“Therefore, scientifically, although it is extremely complex, and although it has the opposite direction, the antimagnetic field generates from the magnetic field and is also found in areas where there is a magnetic

field, especially around the magnet. What can be said is this: although the road is the same, in the sense that it is the same space, a two-lane with opposite movement is created (like a two-lane road where cars move in two opposite directions). All of this can be summarized in the scientific sense as follows: *The antimagnetic field follows the same path, has different intensity and direction opposite to the magnetic field.*"

From the experimental point of view and theoretical elaboration, Naim Krasniqi (2019) formulates the **New Law on the Presence of the Antimagnetic Field:**

"The antimagnetic field generates then and only then when the magnetic poles of the magnet are covered with ferromagnetic materials, and it emanates only from the lateral side of the magnet between the two magnetic poles, and moves in the opposite direction to the magnetic field of that magnet itself from which emanates the antimagnetic fields."

Conclusion

The antimagnetic field, discovered by the physicist Naim Krasniqi, is a reality and an empirical entity. It is a new reality in physics. This new field simply exists. With the acknowledgment of this new field, the science of physics deepens our understanding of reality and opens new areas of knowledge and explanation.

Given the present concepts of physics, the magnetic field is generated by the magnet. To this knowledge Naim Krasniqi adds: the existence of the antimagnetic field is conditioned by the existence of the magnetic field. *Without a magnetic field, there is no antimagnetic field*, whereas there may be magnetic field without antimagnetic field.

It follows, therefore, to generalize the character of discovery, that the only condition to be fulfilled to generate the antimagnetic field within the magnetic field is *to place ferromagnetic material on the magnet poles, because then and only then the antimagnetic field is generated and is effective only within the magnetic field.* And it has the character, properties, and effect of the magnetic field, and is therefore an antimagnetic field.

The existence of the antimagnetic field is easy to ascertain by experiments. *The simplest way to determine it is with iron dust (Fe) and the presence of a magnet. Once the magnet is placed at a certain distance, the iron dust will move toward it and stick to the magnet. If you place an iron plate on one pole of the magnet - there will be no change, meaning the iron dust continues to be stock on the magnet. But if you place another plate on the other pole of the same magnet, the iron dust begins to move away from the magnet, a departure that goes up to a certain distance (this depends of course on the intensity of the antimagnetic field) and stop there.* As many time as desired can be repeated the placing on or removing one plate from one pole of the magnet while the other iron plate is not moved from the other pole of the magnet, and the same pushing motion of the magnet will happen, respectively pulling the magnet.

Finally, it should be noted that *the antimagnetic field is a new reality in physics, it is an empirical entity* - discovered by physicist Naim Krasniqi, *a reference that can be precisely identified and ascertained.* Knowing the new antimagnetic field makes science broaden the horizon of comprehension and see reality differently, as it has never seen it, with a dioptré that will illuminate the picture of the universe and see more things there and more differently as it could not be even imagined before. *Without any doubt, it will arise previously unthinkable questions and presents other, new problems* as by example the structure of the atom.

References

- [1]. Aristotle. (1984). *The Complete Works of Aristotle. Physics*. The revised Oxford Translation. Edited by Jonathan Barnes. Bollingen Series LXXI. Princeton, USA.
- [2]. Abazi, H. 2019. "On the hardness of perceptions changing. - An analysis through the example of the counter-inductive approach to the magnetic field". International Journal of Latest Research in Humanities and Social Science, Vol. 02, Issue 10. Link: <http://www.ijlrhss.com/paper/volume-2-issue-10/7-HSS-527.pdf>
- [3]. Bachelard, G. 1984. *The New Scientific Spirit*. Translated by Arthur Goldhammer. Bacon Press: Boston.
- [4]. Bird, A. 1998. *Philosophy of Science*. Published by University College London (UCL): London.
- [5]. Blundell, S. (2012). *Magnetism: A very Short Introduction*. Oxford University Press, Oxford, UK.
- [6]. de Boer, F.R., 2001. "Magnetism: High-Field". in *Encyclopedia of Materials: Science and Technology*. Editors-in-Chief: K.H. J. Buschow *et al.* Second Edition. Elsevier Ltd.
- [7]. Dreyer, J.L. E. 1906. *History of the Planetary systems from Thales to Kepler*. Cambridge: The University Press.
- [8]. Fleck, L. 1979. *Genesis and Development of a Scientific Fact*. Translated by Frederick Bradley and Thaddeus J. Trenn. University of Chicago Press Book. Chicago, US.

- [9]. Galilei, G. 1880. *The Sidereal Messenger*. Translated by Edward Stafford Carlos. London, Oxford, Cambridge: Rivingtons.
- [10]. Gilbert, W. (1893). *On the Landstone and Magnetic Bodies and on the Great Magnet the Aearth. A New Physiology, Demonstrated with Many Arguments and Experiments*. Translated by P. Fleury Mottelay. John Wilay & Sons. New York.
- [11]. Gould, S. H. 1955. "The Method of Archimedes". *The American Mathematical Monthly*, vol 6, No 7. Published by Mathematical Association of America.
- [12]. Gutfleisch, O. 2001. "Hard magnetic materials, Basic Principles of", in *Encyclopedia of Materials: Science and Technology*. Editors-in-Chief: K.H. J. Buschow *et al.* Second Edition. Elsevier Ltd.
- [13]. Helmenstine, A.M. 2019. How to Demagnetize a Magnet. Demagnetizing Permanent Magnets. ThoughtCo-Science. Link: <https://www.thoughtco.com/how-to-demagnetize-a-magnet-607873>
- [14]. Hughes, S. W. 2005. "Archimedes revisited: A faster, better, cheaper method of accurately measuring the volume of small objects". *Physics education*, Volume 40, Nr. 5.
- [15]. Jackson, D. J. 1962. *Classical Electrodynamics*. Second edition. New York etc.: John Wiley & Sons.
- [16]. Krasniqi, N. 2019. "Sqarimi i fushës antimagnetike" [Explication of the antimagnetic field]. Epoka e re, 24 korrik.
- [17]. Kuhn, Th. S. (1970). *The Structure of Scientific Revolutions*. Second edition, Enlarged. The University of Chicago Press. Chicago, USA.
- [18]. Lacheisserie, E. T., Gignoux, D. & Schlenker, M. 2005. *Magnetism. Fundamentals*. Springer. USA.
- [19]. Maxwell, J. C. (1865). "A Dynamical Theory of the Electromagnetic Field". Link: <http://www.bem.fi/library/1865-001.pdf>
- [20]. Morgan, S. 2018. "How to Demagnetize a Magnet". Sciencing. Link: <https://sciencing.com/demagnetize-magnet-5071154.html>
- [21]. Netz, Reviel, Noel, William. 2011. "The Archimedes Codex: Revealing the Secrets of The World's Greatest Palimpsest". Ebook Weidenfeld & Nicolson, London. Kapitulli 6, "Archimedes method", 1999, or "The Making Science". Link <https://books.google.com.au/books?id=ZC1MOaAkKnsC&printsec=frontcover#v=onepage&q&f=false>
- [22]. Osborn, J. A. 1962. "Demagnetizing Factor for the General Ellipsoid". *Physical Review*. Vol. 67. No. 11-12.
- [23]. Parmenides. 1892. *Poem of Parmenides*. English translation by John Burnett. Link: <http://philoctetes.free.fr/parmenidesunicode.htm>
- [24]. Popper, K. 2002. *The Logic of Scientific Discovery*. London & New York: Routledge Classics.
- [25]. Roentgen, W. K. 1896. "On a New Kind of Rays". *A Cancer Journal for Clinicians*. May/June 1972. Link: <https://onlinelibrary.wiley.com/doi/abs/10.3322/canjclin.22.3.153>
- [26]. Shiu-Hua, L. 1954. Origine de la Boussole. II. Aimant et Boussole. *ISIS*. Vol. 45. No. 2. Link: <https://www.jstor.org/stable/227361>
- [27]. Smith, D. E. 1923. *History of mathematics*. Volume 1. Boston, New York etc.: Ginn and Company.
- [28]. Whittaker, E. T. (1910). *A History of the Theories of Aether and Electricity. From the Age of Descartes to the Close of the Nineteenth Century*. Logmans, Green, and Co. New York, Bombai, and Calcutta.