Proposed operation of the plasma engine **RémyGalli, 18/04/ 2021**

Introduction

The Ummite documents at our disposal are littered with various indications concerning Ummite science: just search for words like "resonance" or "resonance", for example.
Click on "Nuclear" to find descriptions of the operation of various devices using these terms.

The following table shows the results of these searches in document numbering order (except for thematic groupings).

Document	Information	Development
D 33-3	Existence of resonance between He and Kr atoms	
	Instant signal transmission	
D 41-2	Sodium heating and liquefaction by "nuclear technique	
D 41-6	Xenon-based plasma engine	Purpose of this text
D 41-11	Power EM wave generator on a nuclear base	
D 57-1	Controlling the change from one corpuscle to another	
D59-2 to 4	The Ibozoo uu theory	Appendix 1
D 57-3	Transmutation of silica into nitrogen	
D 69-3	Communication channel based on nuclear resonance (using Mo atoms). Instant signal transmission.	Appendix 2
D71	Titanium memory computer. Mastering atom-by-atom fission Mastering atomic-scale gamma beams	

The aim of this study is to focus on the operation of the Xenon plasma engine, while drawing on other aspects which will be developed in different appendices to avoid weighing down the main theme. The aim is not to do science, but to make coherent use of the information contained in these various documents and extract concepts unknown to our science, in an attempt to understand what we would need to develop such a plasma engine.

This choice is dictated by Ummo's history. For if we chronologically align Ummo's technological development with our own, we realize that, assuming we progressed scientifically at the same speed, we'd be only a few centuries away from the plasma engine (I used analyses available on Ummo-sciences to make this alignment).

The following table summarizes this, with dates set back to 2021 as time zero.

Theme	**Date Earth**		**Ground equivalent**
Discovering Ummo's true rotation		-5615	Copernicus 1533
Death of IUI 12		-5402	
Copper conductors to capture telluric currents		-5197	
Gigantic toroids		-5131	Lenz's Law Faraday 1831
We don't know electrostatics. Nor methane engines. But we did discover the pinhole camera and photos on selenium plates.		-4963	Daguerre 1839
Methane engines		-4889	Internal combustion engine 1864
Birth of IE 456		-4788	
Ummowoa birth and reflectors 80% efficiency		**-4777**	Carnot 1803
Electrical network theory.		-4773	Kirchhoff 1845
Ummowoa disseminates its doctrine, End of despotism.		-4759	
Martyr Ummowoa		-4751	
Neurobiological psychology IMII 28		-4180	Psychology 1820
Plasma engine		**-3888**	

This table is interesting for two reasons:

- It shows a kind of equivalence between our 19th-century science and that of Ummo 4800 years ago. Incidentally, it would be useful to examine two points of consistency:
    - Gigantic toroids: *where does the EM energy come* from *to power them?* A clear explanation will have to be found, but that's not the purpose of this text.
    - What about 80% efficiency reflectors, given the laws of thermodynamics?
- Then it's 900 years before Ummo discovers the plasma engine, which, if we position ourselves in relation to the middle of the 19th century, would indicate a development on Earth in just over seven centuries.

This 900-year delay on Ummo shows that this is not a "simple" extension of the 19th century equivalent of terrestrial science, but that it probably involves one or more scientific breakthroughs followed by technological applications.

⇨ That's what I'm trying to show in the following pages.

The flying car

The theme of the very low-flying car on Ummo is therefore addressed in D 41-6 (extract in Appendix 3). On Earth, it's not science fiction, as Franky Zapata (the Flying Man of July 14, 2019) is said to be developing one.

Pourrait-on fabriquer une voiture volante ?

JT 20H - Ce dimanche 4 août, Antoine de Précigout s'est penché sur le projet de voiture volante, sur lequel Franky Zapata travaille dans le plus grand secret.

Technologically, there are some interesting challenges ahead, such as machine control and stabilization. But the main challenge is energy, as we shall see.

Indeed, if we examine Franky Zapata's current Flyboard, we learn that it has a kerosene autonomy of 10 minutes, the latter being in a 37-liter capacity backpack. A quick calculation gives a consumption of 200 liters per 100 km.

The Flyboard consists of 4 small jet engines, examples of which can be found on the Internet.

Name	Value
Pressure ratio	3,8
Mass flow (kg/s)	0,47
Consumption Full load (ml/min)	820
Consumption idle (ml/min)	138
Weight [g]	2155
Dimensions of the diameter (mm)	121
Length (mm)	322
Weight set in box (g)	3290
Carton dimensions (LxWxH; cm)	
Exhaust gas temperature (°C)	480-750
Idle speed (1/min)	35000
Max rpm (1/min)	117000
Thrust at idle (N)	11,8
Thrust @ maxRpm (N)	250
Exhaust gas velocity (km/h)	1860
Exhaust gas power output (kW)	75
SFC @ maxRpm (kg/Nh)	0,158

Indeed, 4 small JetCat P250 Pro engines (length: 32 cm) consume 3.3 l/min at full load, which is consistent with the Flyboard's consumption of 37 l every 10 minutes.

The assembly specifications are as follows: mass flow of 4*0.47 kg/s, (i.e. 1.9 kg/s), for a total thrust of 1000 N, which compensates for a mass of around 100 kg (roughly Franky Zapata and his backpack full of kerosene).

Total gas output from the 4 reactors: 4*75 kW=300 kW. Outgoing hot gas

velocity: 510 m/s, at a temperature of 450 to 750°C.

Now let's transpose these Flyboard data to the weight of a flying car, even a light one, with a GVWR of 1500 kg (including passengers and **500 kg** of fuel). The thrust required is 15,000 N, which is possible with 16 **JetCat P1000-PRO** engines (divided into 4 groups of 4, as shown in the TF1 photo). (See detailed specifications on the Internet).

- Mass flow: 1.8kg/s*16 reactors=29 kg/s
- Thrust 1100*16=17600 N (with a slight margin over 15000N)
- Total gas output: 336*16=5**.4 MW**
- Full-load consumption: 46 l/min or 37 kg kerosene/min
- Full-load range: 500/37= 14 min max (hence the choice of 500 kg of kerosene).

The result is a profusion of energy and consequent consumption for little autonomy, since a simple Ecureuil helicopter can do much better than this on the basis of very similar technologies.

Pays de fabrication	France
Premier vol	1998
Turbine	Arriel 2B
Puissance	847 ch/632 kW
Poids à vide	1280 kg
Capacité maxi de levage au niveau de la mer	1200 kg
Persones	1 pilote et 5 pax
Consommation de kérosène	env. 180 l/h
Durée maxi de vol	2 h 50 min
Rayon d`action	600 km
Vitesse maxi	287 km/h
Vitesse de croisière	225 km/h
Altitude maxi d'opération	7000 m au-dessus du niveau de la mer
Vitesse de rotation du rotor	393 tr/Min.

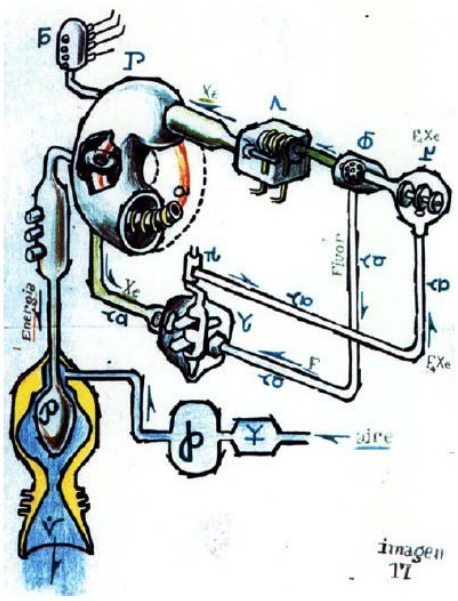
A 632 kW helicopter is noisy enough, but what about a system of 16 basic turbines developing 5.4 MW? Incidentally, Franky Zapata, with his modest 300 kW Flyboard, is said to have had quite a few problems with his neighbors around his factory, if the Internet is to be believed.

In conclusion on the theme of energy :

- **If the energy source is compact and plentiful,** the flying car is of obvious interest, as it means we can dispense with a road network altogether and move around in 3D.
- As for the problem of noise linked to the ejection of hot gases at high speed, it is completely in line with the current concerns of civil aviation, and this subject is steadily evolving towards ever greater silence.

The plasma engine in two parts

This long introduction brings us to the heart of the matter. Readers may find it useful to refer to the explanatory extract from letter D 41-6 in Appendix 3 for further explanations and acronyms.



The general concept is simple to understand and similar to our own

(Reference 1 Rocket Propulsion Elements by G Sutton and O Biblarz).

TABLE 1–1. Energy Sources and Propellants for Various Propulsion Concepts

Propulsion Device	Energy Source[a]			Propellant or Working Fluid
	Chemical	Nuclear	Solar	
Turbojet	D/P			Fuel + air
Turbo–ramjet	TFD			Fuel + air
Ramjet (hydrocarbon fuel)	D/P	TFD		Fuel + air
Ramjet (H_2 cooled)	TFD			Hydrogen + air
Rocket (chemical)	D/P	TFD		Stored propellant
Ducted rocket	TFD			Stored solid fuel + surrounding air
Electric rocket	D/P		D/P	Stored propellant
Nuclear fission rocket		TFD		Stored H_2
Solar-heated rocket			TFD	Stored H_2
Photon rocket (big light bulb)		TFND		Photon ejection (no stored propellant)
Solar sail			TFD	Photon reflection (no stored propellant)

[a]D/P developed and/or considered practical; TFD, technical feasibility has been demonstrated, but development is incomplete; TFND, technical feasibility has not yet been demonstrated.

We enter the category of engines with a propellant fluid heated by an independent system. The fluid chosen here is liquid air (the table above shows our developments with stored liquid hydrogen), and the heating system is neither solar nor chemical (with the addition of kerosene, for example) and is the subject of this study.

Thermodynamics and propulsion" section

The physics of nozzles is well known to our engineers (see reference 1 page 45 and also "The Laval nozzle" on Wikipedia).

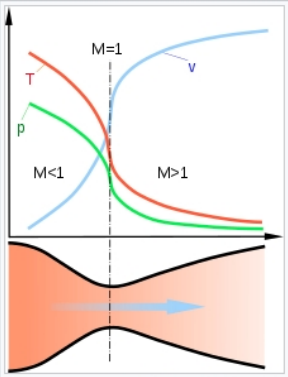
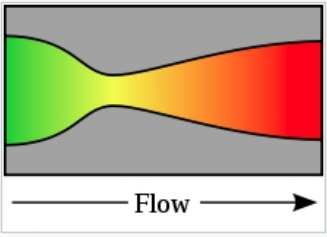


Diagramme montrant l'évolution de la pression (P), de la vitesse (V) et de la température (T) tout au long des sections d'une *tuyère de Laval*. La température et la pression chutent au fur et à mesure de la progression du gaz, tandis que sa vitesse augmente jusqu'à dépasser celle du son au niveau du col.



Vitesse des gaz dans une tuyère de Laval : le gaz qui se déplace lentement (vert) dans le convergent accélère progressivement jusqu'à atteindre sa vitesse maximale (rouge) en sortie du divergent.

We're going to make a small assessment on this basis.

As in the previous chapter, the payload mass of the loaded vehicle (GVW) is set at 1500 kg. As gravity is a little stronger on Ummo, we'll need to ensure a thrust of 1500*11.88=17820 N=F=q*vgaz, q being the mass flow rate and vgaz the velocity of hot gases at the nozzle outlet.

The power will be "limited" to 6 MW = (1/2 q vgaz^2), i.e. of the same order of magnitude as the power estimated above. We can distribute this power over 4 independent nozzles as above.

In view of this data, we need..:

- A mass flow of 26.4 kg/s, i.e. 6.6 kg/s per nozzle if 4 are used.
- A gas velocity of 673 m/s at the outlet of each nozzle.

Using a few formulas (Rocket Propulsion Elements by G Sutton and O Biblarz, and a Wikipedia article), these values can be obtained with an inlet chamber temperature of only 550°K, an inlet chamber pressure of 20 bar, and an outlet gas pressure of 3 bar (atmospheric pressure on Ummo).

The temperature obtained at the outlet of each nozzle would be around 47°C, if my calculations are correct. This is an interesting point, showing that initial heating to a relatively low temperature (277°C) enables relatively "cold" gases to be evacuated.

Another point to note is that a motor operating at 277°C (550°K) presents no difficulties for the mechanical dimensioning of the assembly.

The following two values will be used in the following:

- T inlet chamber = 550 °K
- Gas power = **6 MW** or 1.5 MW per nozzle.

I didn't mention the question of air liquefaction because I didn't see the point, given that compressing air from 3 bar to 20 bar isn't a problem, whereas liquefying it on line seems more complicated.

The "heating system" section for gases entering the turbine

As we have already seen, chemical heating is not a realistic option, given the amount of fuel required for a very short range (500 kg of fuel for a range of around 14 minutes).

Purely radiative heating of a heating element by a filament, even at 1873°K (1600°C), is not realistic either: using Stefan-Boltzmann's law, we estimate that a surface area of 10 m^2 heated entirely to 1873°K would be needed to emit a radiative power of 7 MW.

But this doesn't fit the problem: we have a limited surface area or volume corresponding to that of a flying car.

We need to think outside the box.

The first idea that comes to mind is to turn to nuclear energy, as the ratio between nuclear and chemical energy is of the order of 250,000 to 125,000 (see, for example, Wikipedia: Comparison of nuclear and chemical energy).

This means that 500 kg of chemical fuel (as chosen above) could be replaced by 2 to 4 g of nuclear fuel.

⇨ We'd then have an available, compact energy source, enabling the concept of a flying car.

But how do we go about extracting this energy from a few grams of Xenon, which is also of nuclear origin? We're familiar with fission reactions on heavy fissile materials (Pu, U5), or fusion on light materials (Li, D2, T3) to obtain thermal energy from nuclear power, but what about non-fissile materials like Xenon? Especially since the aim is not to transform it completely into something else, but to recover it at the end of its service life.

What magic does Xenon have to do with heating? Imprisoning ionized Xenon in a sort of mini tokamak is in itself a technologically very difficult process not covered in this study (see some information in Appendix 4), but how do you extract energy from it?

Proposed plasma engine heating principle

What follows is my own responsibility! The main idea is in fact of purely Ummite origin, consistent with other descriptions of the operation of Ummite instruments, and it came to me while reading text D 69-3 (reproduced in Appendix 2): it describes a method of communication based on a nuclear reaction unknown in our physics and employing Molybdenum; to enable the reader to understand why I used this idea of a nuclear reaction unknown on Earth, I have inserted throughout the text in Appendix 2 an attempt to explain this phenomenology as I believe I understand it.

This Ummite idea of a nuclear reaction on molybdenum will now be applied by analogy to Xenon.

Needless to say, this kind of physics is unknown on Earth, so what follows may be completely crazy.

Xenon is an element with several stable isotopes, as shown in the table below.

Isotopes les plus stables

Iso	AN	Période	MD	Ed MeV	PD
^{124}Xe	0,1 %	$1,8 \times 10^{22}$ a	2ε	0,0643	^{124}Te
^{126}Xe	0,09 %	stable avec 72 neutrons			
^{127}Xe	{syn.}	36,4 j	ε	0,662	^{127}I
^{128}Xe	1,91 %	stable avec 74 neutrons			
^{129}Xe	26,4 %	stable avec 75 neutrons			
^{130}Xe	4,1 %	stable avec 76 neutrons			
^{131}Xe	21,29 %	stable avec 77 neutrons			
^{132}Xe	**26,9 %**	stable avec 78 neutrons			
^{133}Xe	{syn.}	5,243 j	β-	0,427	^{133}Cs
^{134}Xe	10,4 %	stable avec 80 neutrons			
^{136}Xe	8,9 %	$2,36 \times 10^{21}$ a	β-	?	^{136}Ba

We are interested in the sequence of the most stable isotopes from 128 to 136, and to illustrate the main idea, we choose the most abundant, Xenon132. (Note that it has an isomeric state with a lifetime of a few ms).

Ground and isomeric state information for $^{132}_{54}\mathbf{Xe}$

E(level) (MeV)	Jπ	Δ(MeV)	$T_{1/2}$	Abundance	Decay Modes
0.0	0+	-89.2789	STABLE	26.9086% *33*	
2.7522	(10+)	-86.5267	8.39 ms *11*		IT : 100.00 %

We now write about an original nuclear reaction that our science would reject. The red is to make it clear that this may be completely crazy.

$$^{132}_{54}Xe_{78} \ominus {}^{1}_{1}H_{0} \rightarrow {}^{131}_{53}I_{78} \oplus \text{atomes excités } {}^{132}_{54}Xe_{78} \rightarrow {}^{131}_{54}Xe_{77} + \beta + \Delta u$$

The notations $\oplus$ *et* $\ominus$ are there to replace our usual + and - signs used in nuclear physics in order to signify that these reactions do not exist in our physics :

$\ominus$ Axis inversion of a disappearing proton distributing its mass energy.
$\oplus$ Energy distribution of the "missing" proton at compatible Xenon isotopes (referred to as resonant in the texts).

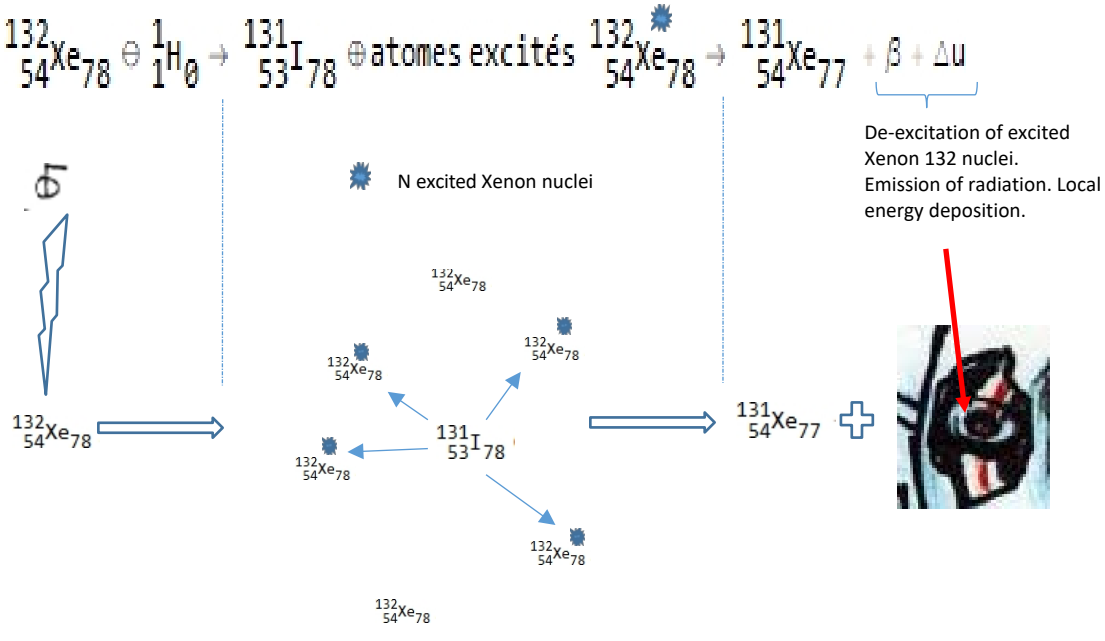
As explained in Appendix 2 for the case of Molybdenum, this distribution is made to the N nuclei closest to Xenon 132 via a 1/r^3 law, each receiving part of the starting energy, until the energy is exhausted and this for a certain limiting distance. This ⊕ "instantaneous" transfer process is unknown to our science (there is no vector via electromagnetic or other waves, as in quantum entanglement); the energy is distributed over the quantum levels of the N nearest Xenon nuclei, *the excited levels of these nuclei being all the higher the fewer Xenon 132 atoms present (Appendix 2).* I deduce that in an environment very rich in Xenon 132, there would be a kind of equipartition of energy on the lowest levels of the N surrounding Xenon132 nuclei; the total energy distributed would be worth about Δu , that of the balance in the equation above (with perhaps one coefficient to spare
as in Appendix 2).

<u>The proposed heating principle is then as follows for a reacted Xenon 132 nucleus:</u>

- The nuclear activator triggers the reaction.
- The Xenon132 nucleus, deprived of a proton, is transformed into Iodine131, which in turn is transformed into Xenon131 by the emission of an electron of energy β.
- But here's what's most important in energetic terms: Xenon 132 nuclei close and excited will return to their ground state by emitting gamma rays: <u>these gamma rays, with energies distributed between 100 keV and 1.2 MeV , the sum total being Δu , will be stopped very locally in the structure of the mini Tokamak, giving up their energy to the Tokamak.</u>
  <u>energy, which naturally heats up the structure.</u>

  When all is said and done, the initial Xenon132 nucleus, excited and having lost a proton by the ⊖ process, has been transformed into Xenon131: <u>Xenon is indeed present, but it is a different isotope, Xenon131.</u>

The following diagram illustrates the proposed principle for an "activated" Xenon 132 core.



This heating reaction for a vanished proton would deposit 930 MeV in the near structure of the mini tokamak, or 1.5 10^-10 Joules. This is a very low value, and much more Xenon 132 needs to be "activated" in the reaction.

Estimated Xenon "consumption" requirement.

The following calculation is for illustrative purposes only.

In fact, it is daring to make a precise dimensioning , because we are in the presence of several unknowns , especially on the share of energy Δu actually redistributed in the form of gamma radiation following the reactions $\ominus$ et $\oplus$.

⇨ In the following, we'll assume that all this energy Δu is used for heating. Calculating the balance for one reaction gives Δu =930 MeV.

We're going to estimate the number of reactions per second needed to develop a power of **6 MW**: we can always try to introduce an overall thermodynamic efficiency, but given the unknowns mentioned above, this won't really change the orders of magnitude. (This efficiency must include the power generated by the heating of the structure itself, thermal conduction to the expansion chamber, and the heating of the propellant gas).

If one reaction delivers 930 MeV, it takes 4 10^16 reactions per second to develop 6 MW at the source. For a two-hour trip, this would correspond to the "consumption" of 64 mg of Xenon132, and therefore to the creation of 64 mg of Xenon131.

Xenon 131 will gradually replace Xenon 132 in this process involving the following reactions $\ominus$ and $\oplus$; this means that when all the Xenon 132 has been partially transformed into Xenon 131, the proposed reaction will also apply to Xenon 131, which will gradually be transformed in turn into Xenon 130. This downward isotopic cycle is repeated until the final product is Xenon 128, accompanied in small proportions by Tellurium 128. Xenon fuel can therefore be used several times in different isotopic forms, until it is replaced when it is deemed "spent".

Overall, with just a few grams of Xenon, autonomy will be several hundred hours; at some point we'll no doubt have to change the spent fuel, as we do in our nuclear power plants.

CONCLUSION

The theme of letter D 41-6 was approached in the light of our current knowledge in various fields of physics, with a little thermodynamics and very little nuclear physics.

The guiding principle of this study was first to find an explanation for the very large amount of energy required to fly an autonomous vehicle at ground level: only nuclear energy seems to match the descriptions given.

The proposed nuclear reaction using Xenon does not exist on Earth, but this type of nuclear reaction seems to be used on other equipment developed by the Ummites: it is by drawing on a description of concepts unknown to our science, and applying it by analogy to our subject, that we would arrive at a possible explanation of how the plasma engine works. This explanation is constructed to be consistent, at least in first approach, with the principle described for the operation of other devices. And it seems to work.

However, this embryonic explanation leaves many grey areas unanswered:

- How can we control a beam of Xenon ions in a sort of mini tokamak at low temperature (1600°C)? This last point (described in some detail in Appendix 4) does not a priori represent a real scientific breakthrough, but rather a desire to move towards this type of object and make the effort to develop it (which could take several decades).
- How to control possible radiation protection concerns? Because the abundant emission of MeV gamma rays is not harmless, and good shielding is certainly needed to avoid irradiating passengers!
- **But the real fundamental question is**: what is this basic technological building block for triggering the proposed nuclear reaction, a building block baptized by the Ummites (nuclear activator or trigger)? As its operation and principle are based on unknown physics, it doesn't yet seem within our reach, at least not in the immediate future: a major scientific breakthrough is certainly needed to discover this new physics, and then develop technological applications like those described by the Ummites.

If these people from elsewhere do exist, I can understand why this technology isn't shared with us; because as soon as you touch nuclear energy, everyone knows that you can produce electricity, for example, but also, and above all, formidable weapons.

If these people don't exist, the Earthlings who wrote these letters are still very imaginative, consistent over time (more than 60 years) and consistent in an interdisciplinary way, at least in the field of physics, which I have practiced more than other disciplines.

If we add to this the fact that they seem extremely well educated in all areas of our history and religions, that they seem perfectly polyglot, altruistic and very respectful of certain moral laws, we could almost call them extraterrestrials....

APPENDIX 1 Ibozoo UU theory: a new physics.

Honestly, I don't understand much of what's being said.

What I retained was that our idea of the subatomic particle is completely illusory, and that it had to be replaced by this mathematical entity called Ibozoo UU. Quote:

> Nous savons aussi que tout corpuscule atomique (neutron, proton, méson K, etc.) est en réalité une projection différente dans un cadre tridimensionnel, d'une même entité mathématique-vraie que nous appelons **IBOZOO UU** (au point que nous accordons, dans le **WAAM** (univers), l'attribut de "vrai" ou "existant" au seul **IBOZOO UU**).
>
> Vous pouvez vous imaginer l'**IBOZOO UU** par une image didactique, comme un "faisceau" ou "paquet" d'axes "idéaux" dont les différentes orientations poly-directives donneraient lieu à ce qu'un physicien interprète ce "faisceau" ou "fagot" (ou "hérisson") aux multiples pointes orientées, certaines fois comme un quantum, d'autres fois comme une masse (par exemple un lepton : un électron). Ces derniers, en tant que masse, charge électrique, moment orbital, etc, représentent en réalité les différentes orientations axiales de l'**IBOZOO UU**, de la même manière que les différents tons chromatiques (orange, indigo, cyan...) ont comme base une fréquence différente dans le spectre électromagnétique.

The image I've formed of it is certainly wrong, but it allows me to hold on to some kind of visualization of the thing! The idea came to me one day when I was reading La Recherche (December 2018 page 74).

To sum up, there's an extraordinary theorem by Kenneth Falconer: "if we set ourselves desired patterns for shadows in all directions, then there exists a 3D object whose shadows, in almost all directions, will almost match the patterns set beforehand".

> A concrete illustration is provided by this digital sundial invented in 1984 by mathematician Kenneth Falconer, who forgot to apply for a patent!

Here is a figure from his publication

SETS WITH PRESCRIBED PROJECTIONS
AND NIKODYM SETS

K. J. FALCONER

[Received 8 November 1984]

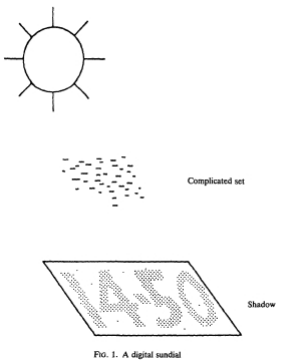


FIG. 1. A digital sundial

Others have exploited the unpatented idea commercially: you can buy such a sundial on the Internet: http://www.digitalsundial.com/home_fr.html

So I translated this (for my imagination anyway) as follows, knowing that Falconer's theorem is valid for N-dimensional spaces:

> "Projections in a 4-dimensional space-time of an "Ibozoo uu" lattice (located in a 5-dimensional space) in almost all directions of this space and along a bundle of ideal axes, give according to the chosen axes the elementary particles of all types encountered in nature: photons (quantum), electrons, and explain their physical properties as we observe them with their mass, charge, orbital moment, etc..."

I chose the notion of a network because obviously, a single Ibozoo does not exist, nor does the notion of distances between two of them, knowing in passing that distance is quantified in steps of 12^-13 cm (about 1/10ième of the dimension of a quark).

If the Ibozoo uu theory is true, then we can better understand the vain quest of our physicists as it is written in the paragraph of letter D 59-2 that I recopy here:

> Vous comprendrez aussi que ce que vous nommez SOUS PARTICULE atomique, comme un NEUTRINO, un MÉSON ou un ANTI-PROTON, avec des attributs divers de masse, charge et spin, ne sont que des orientations multiples d'un même IBOZOO UU. (C'est pourquoi, si les physiciens terrestres continuent à passer leur temps à la détection, évaluation et classification de toutes les subparticules possibles, il se passera des milliards d'années pour en finir puisque ce travail est aussi stérile que de donner un nom à l'infinité d'angles sous lesquels nous pouvons contempler une étoile au long d'un jour.

My point is that a ***"simple"*** different orientation of the lattice projection makes it ***"easy" to*** switch from one particle to another, for example from a neutron to a proton, or vice versa.

How can this simple trick be performed in practice? What about conservation of energy, since neutrons and protons don't have the same mass energy?

⇨ No idea, of course. **All I can say is that there is a scientific basis on Ummo, which for us is a new physics that allows us to conceptualize the transformation of one elementary particle into another.**

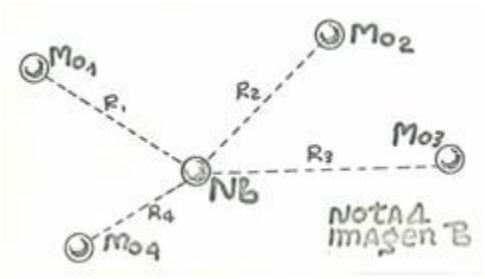
APPENDIX 2 Molybdenum atom-based communication: application of new physics

I've reproduced the text and diagrams in full, with my comments in red.

The "OAWOENNIUU" effect D 69-3

To understand the OAWOENNIUU (nuclear resonance) effect (OAWOO = ENNIUU axis = resonant magnetic transfer method), you'll need to understand our theory of the constitution of Space and Matter. I'll try to give you a summary using concepts you're familiar with.

Assume, for example, a numerically reduced set of molybdenum atoms:



For example, Mo1, Mo2, Mo3...Mon, whose nuclei have the particularity, at a given moment, of having an identical configuration of their energy levels, referring to the distribution of their nucleons. It doesn't matter that the quantum levels of their electron shells are different, or that their orbits are shared in any chemical sequence. We say that these atoms are OAWOOENII (in resonance).

(We talk about nucleon distribution for identical level configurations, without worrying about electronic levels: resonance then means, in my opinion, "all of the same isotope", and probably all in the same nuclear state).

We also know that any atomic corpuscle (neutron, proton, K meson, etc.) is actually a different projection in a three-dimensional frame, of the same mathematical-true entity that we call IBOZOO UU (to the point that we grant in the WAAM (universe) the attribute of true or existent to IBOZOO UU alone).

(See Appendix 1)

You can imagine the IBOZOO UU in a didactic image, as a "beam" or "bundle".
A physicist would interpret this "bundle" or "bundle" (or "hedgehog") with its multiple oriented points, sometimes as a quantum, and other times as a mass, a lepton or an electron, as a "bundle of ideal axes" whose different poly-directive orientations would give rise to what a physicist would interpret as a "bundle" or "bundle" (or "hedgehog") with its multiple oriented points, sometimes as a quantum, and other times as a mass, a lepton or an electron. The latter, as mass, electric charge, orbital moment, etc., actually represent the different axial orientations of the IBOZOO UU, in the same way that different chromatic tones are based on different frequencies in the electromagnetic spectrum.

Imagine that we're trying to disorient a single nucleon (a proton, for example) within the Mo1 atom; it may happen that the inversion isn't absolute, in which case the effect observable to you would be the conversion of the proton's mass into energy. $\Delta E = {}^{mc2} + K$ (m being the mass of the proton and K a constant).

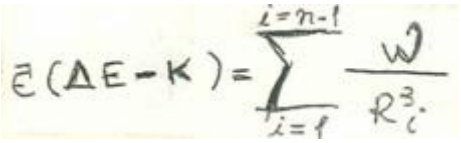
(It is therefore possible to intervene on a nucleon, in this case a proton, which is transformed into energy. K in the example given must be the binding energy of the proton in the nucleus. This value averages 8 MeV/nucleon).

We thus obtain the isotope of Niobium (as you call this fundamental chemical element). But we can force the disorientation of the IBOZOO UU's "axes" (absolute inversion) in such a way that an observant physicist would see, surprised, that the proton appears to have ANNIHILATED without any release of ENERGY. This phenomenon would seem to you to contradict the universal principle of conservation of mass and energy (conservation rightly called into question by other Earth physicists); in fact, the Hypotheses formulated by some EARTHLINGS

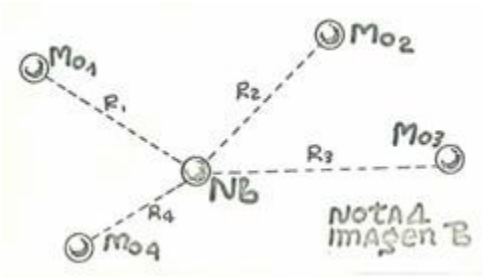
on the actual CREATION OF MATTER IN THE UNIVERSE are actually based on the fact that sets of IBOZOO UU do in fact completely invert in our three-dimensional framework, becoming observable by those who live in it.

(Indeed, if the proton simply disappears, where did the energy ΔE=mc^2+K go? This is the question posed in Appendix 1. The answer here is not very clear, explaining that it could have materialized in another 3D frame: the energy would then be conserved in both these frames and not just in our 3D frame).

Now let's look at a negatively ionized Niobium atom (Molybdenum, having lost a proton, is transformed into Niobium, and as the proton's charge has disappeared, and the electron has remained, the Niobium atom is negatively ionized). Undoubtedly, the rest of the n-1 Molybdenum atoms have undergone an alteration in their nuclear energy levels, so that the nucleic energy of each of these atoms increments in W/Ri^3 Verifying that :



(But not all the energy has disappeared into another 3-D frame: the energy ΔE- K= m c^2=938 MeV of the proton, weighted by an unknown coefficient Ebarre, will be redistributed to the other Mo atoms by isotopic resonance effect! This redistribution will result in the excitation of (n -1) nucleons in the other Mo nuclei, depending on their distance, with a variation in 1/r^3, each one being pushed to a quantum level of +W energy, the higher the number of "competing" nuclei in the vicinity (*), and this without any intermediary photon or other (**). (See below)).



R_i = radial distances to the Niobium atom of each of those which remain $\vec{W}$ and $\vec{\varepsilon}$ "constants" of the system, whose values depend not only on n , but also on the nuclear structures and R_i.

The energy transferred to the nuclei of the remaining Mo atoms by this resonance effect is quantified in such a way that it can reach zero for an atom in the set located at a distance R greater than a defined threshold.

Thus, if we manage to excite a Molybdenum atom (Mo1) located in a transmitting organ () by interchanging one of its nucleons, we will notice in a receiving organ () containing another Mo_2 atom, a quantum alteration in the latter, all the higher as there will be fewer parasitic atoms in resonance nearby.(*)

It should be pointed out that the energy transfer is not made by an exciter field, so that the transmission time is zero (we speak of transfer speed or INFINITE information flow). ((**) This is very similar to quantum entanglement).

This physical principle would apparently facilitate the development of "instantaneous" communication systems at enormous interplanetary distances, so that a message wouldn't take several light-years to reach its destination. Unfortunately, this is impossible in practice, as the existence of disruptive or parasitic atoms at large, in resonance with the transmitter, would absorb all the system's energy. A quantified part of this energy could never be transferred by resonance to such a distant atom. As a result, the efficiency of the transmission system depends on there not being masses of a similar chemical element in the vicinity of the network, attenuating the transmitted signals. (Optimum transfer then requires very few transmitting nuclei of the same isotope, no identical nuclei at all in the environment, and at some relatively small distance, a few receiving nuclei).

What can we learn from this information?

Before moving on to the ideas we might derive from this, let's try to understand what happens to the original Molybdenum nucleus, within the framework of our physics, on the assumption that we are in possession of the proton inversion device.

Let's start with a Mo isotope and take Mo96, for example, in the middle of the following table.

Isotope	Abondance (pourcentage molaire)
^{92}Mo	14,77 (31) %
^{94}Mo	9,23 (10) %
^{95}Mo	15,90 (9) %
^{96}Mo	16,68 (1) %
^{97}Mo	9,56 (5) %
^{98}Mo	24,19 (26) %
^{100}Mo	9,67 (20) %

This one is stable and, as shown above, there are 6 others (Note: this choice is for *illustrative* purposes only. In retrospect, it may not have been a wise choice, as the Mo96 nucleus has no spin in the ground state, as shown in the table below. Perhaps we should have started with Mo95, or Mo97, which have a 5/2 spin. This could be important if we're thinking of a Nuclear Magnetic Resonance-type process for inversion...)

Ground and isomeric state information for $^{96}_{42}$**Mo**

E(level) (MeV)	Jπ	Δ(MeV)	$T_{1/2}$	Abundance	Decay Modes
0.0	0+	-88.7948	STABLE	16.67% *15*	

We now make a proton disappear from the molybdenum nucleus: in our universe, this corresponds to the disappearance of a mass energy of the order of 938 MeV - the binding energy; we end up with Niobium (1 proton less and a total of 1 nucleon less), which is radioactive.

Ground and isomeric state information for $^{95}_{41}$**Nb**

E(level) (MeV)	Jπ	Δ(MeV)	$T_{1/2}$	Decay Modes
0.0	9/2+	-86.7862	34.991 d *6*	β^- : 100.00 %
0.2357	1/2-	-86.5505	3.61 d *3*	IT : 94.40 % β^- : 5.60 %

This radioactive Niobium will ultimately decay by beta-into Mo 95 (a neutron will
This "changes" into a proton, which does not change the total number of nucleons.) The result is another stable Mo isotope, but one that is no longer "in resonance", since it is no longer the same isotope as at the start.

Ground and isomeric state information for $^{95}_{42}$**Mo**

E(level) (MeV)	Jπ	Δ(MeV)	$T_{1/2}$	Abundance	Decay Modes
0.0	5/2+	-87.7118	STABLE	15.84% *11*	

With this sequence of reactions, the original Mo core has changed from Mo 96 to Mo 95.

The "disappeared" proton instantly distributes a certain amount of energy (weighted by Ebarre) as it disappears to the other Mo96 nuclei present by "resonance effect", with the result of exciting the nuclear levels of these various Mo96 receptors to a level of
+W, depending on their distance in 1/r^3 from the transformed core.

The result is a collection of excited Mo 96 nuclei, which will release the stored energy to return to their ground state. For each nucleus that has lost a proton, we end up distributing a maximum of 938 MeV (because we have to take into account the weighting coefficient and the binding energy of the proton, of the order of 8 MeV).

In the end, we learn of two unknown effects, the third being due to the weak force (radioactive decay):

These two effects are (unknown effects are in *italics*) :

- Disappearance by *"absolute inversion"* (OAWO=inversion of the axis) of a proton in a Mo nucleus, which was at a *certain* energy level in the nucleus.

- *Instantaneous distribution in time and space* of its mass energy (corrected for its binding energy), distributed however with a *certain* weighting coefficient and by resonant quantum entanglement to a *certain number of* other Mo nuclei of the same isotope located in the same universe (ENNIUU=resonant magnetic transfer method in the same isotope sense). If we follow the previous function literally, the term
  Perhaps "magnetic" means the prior establishment of a magnetic field of a *certain* level and frequency, as found in our NMR (nuclear magnetic resonance) systems.

All the excited nuclei of Mo96, known as receptors, then return to the ground state of Mo96.

Similarly, the Nb nucleus, known as the emitter, decays to produce another Mo isotope, Mo95.

A proton has disappeared in this cascade of reactions.

The balance is as follows:

- With each proton inversion, the corresponding number of atoms of the starting isotope Mo 96 decreases, with the final isotopic descent one level towards a stable element, in this case Mo95.
- Energy is released in the form of various types of X and Beta radiation, each with energies in the MeV range (this is the order of magnitude of most radioactive decays). The total energy released cannot exceed Ebarre* (938 MeV- K) per nucleus that has undergone an "inversion", Ebarre being a coefficient.

Analysis

At first glance, this system seems quite complicated for a highly integrated transceiver.

The advantage, however, is instantaneous signal transmission. This is undoubtedly the most important aspect of a nave control system: no time corrections, however small.

The apparent disadvantage is that this would induce radioactive decay wherever transmitters and receivers are located, which could pose problems of radiation protection, or irradiation of nearby components. However, given the efficiency of transmission over short distances, a few starting nuclei used in the process would suffice to transmit the information. The radiation protection argument would then fall apart.

As the nave is equipped with numerous magnetic systems, it is possible that all of the equipment will be bathed in a magnetic environment that will enable the Oawoenniu effect to be achieved in any location (magnetic environment in the sense of ad hoc level magnetic fields, with ad hoc frequencies, a bit like what we know from Nuclear Magnetic Resonance, but without being able to say more...).

⇨ Why not a process based on magnetic fields, as the Ummites seem to have an advanced mastery of everything to do with magnetism.....

What's even more astonishing, then, is that the inversion system for a proton would necessarily be very small, on the scale of each individual transmitter, since its purpose is to equip the nave with a multitude of sensors to enable them to transmit their status to a control computer.

Conclusion to Appendix 2

- **Our mastery of particle inversion technology has enabled us to deploy ultra-miniaturized devices enabling inversion on the scale of the atomic nucleus.**
- **This complements Appendix 1: based on new physics, technical devices have been developed for practical applications.**

- **This last point seems consistent with the description of the Titanium memory computer, for which we have mastered fission at the atomic level, and also the direct interrogation of Titanium nuclei with a system of 3 gamma beams to read or write the information carried in the electron cloud of a Titanium atom.**

- **For the conservation of energy and the physics of inversion in general, we need to extend our 3D frame of reference (our universe) to that of a twin universe (another 3D frame). Yet another novelty, although this subject is being actively developed on Earth by Jean-Pierre Petit as part of the extension of our current cosmological science.**

APPENDIX 3 Extract from Jean Pollion's analysis number 14, available on ummo-sciences, followed by an extract from letter D 41-6.

This motor is illustrated in D41-6 (T8-20 and 21) and is described on one page.

The diagram essentially shows the functional components, fortunately free of all ancillary control devices.

Analysis of the text and diagram leads to the following observations:

- The energy source is cited but not described, but its name "NUCLEAR ACTIVATOR FOR PLASMA FORMATION" operating on a self resonance basis suggests that the device relies on some form of (nuclear) nucleus resonance for energy transfer.
A field still unknown to our science.

- Xenon plasma, in the form of quadruple-charged ions, is not energetic in itself, like all plasmas. It is merely the carrier-vector converter of the energy received, converting it into heat energy, which is used to superheat and expand the propulsion air.

- As explained in the last paragraph, xenon tetrafluoride was chosen because fluorine is the only chemical compound that reacts with noble gases, and therefore the only one to allow access to the ionized noble gas atom. Xenon's relatively high atomic mass (131), which gives it an interesting "viscosity" in the ionized state, and its quadruple-charge capability, which should guarantee it a very long life in the ionized state, since 4 electrons are needed for a return to the gaseous state, which is without "possible recovery" in the toroidal confinement chamber. This part of the "engine", in particular, could be the subject of verification-research into the stability of the xenon plasma, bearing in mind that an external energy input is necessary.

- Xenon tetrafluoride, being the "supplier" of xenon ions, is therefore broken down into ionized xenon, which is transported to the toroidal containment vessel, and ionized fluorine, which is recombined (giving off electric current) into a by-product (4 F^- to 2 $_{F2}$ + 4e^-). Apart from a few possible leaks, the fluorine is stored in gaseous form at high pressure in a holding tank.

- It's important to understand that ionized xenon is released when the engine is started, and is not consumed. It is simply used in a closed circuit (the red plasma ring in the drawing).

- When the motor is switched off, for example by cutting off plasma activation, the plasma cools down and, with the aid of a small electric current, the xenon is converted back into a gas (Xe^{4+} + 4e^- to Xe), which is then reacted with the fluorine that has been on standby since start-up (under high pressure) in a nickel (or silver) enclosure heated to at least 400°C to reform the initial xenon tetra fluoride (Xe + 2 F2 to $_{XeF4}$). This solid compound is stored in a suitable temperature or aqueous solution for subsequent operation.

DESCRIPTION OF A GOONNIAOADOO BUUTZ (extract D 41 -6)

The principle of this BUUTZ is well known on our planet since a team of technicians under the direction of YUIXAA 37 son of YUIXAA 36 developed it in the XEE (year of Ummo) 5476 of the second time. Subsequent modifications only concern the control process, which today is carried out by a XANMOO (titanium-memory nuclear computer).

Although the diagram is very basic and does not include auxiliary self-checking equipment, it will provide a good illustration of how it works.

The BUUTZ works on the basis of a GOONNIAOADOO thermal generator that causes the sudden expansion of previously liquefied air. Oxygen and nitrogen, already gasified, are released through a nozzle *(D41-6-ideo1)* and are projected towards the ground, causing the vehicle's aerodynamic balance to react.

Let's analyze the process:

The diagram shows a toroidal chamber. This equipment *(D41-6-ideo2)* transforms XENON gas into GOONNIAOADOO, a gas state in which, at very high temperatures, atoms remain in the form of NIIOADOO (ions). The temperature at the center of the toroidal current reaches 1600°C (terrestrial) in a gaseous environment whose circular or annular filament has a diameter of just 3 microns (terrestrial).

The XENON gas required for operation is stored in the form of crystals of Xenon ($_{F4Xe}$) in the chamber *(reservoir?)* *(D41-6-ideo3)*. Don't be surprised by this chemical composition, since it's a noble gas (as you even call it), so it's unlikely to combine with other chemical elements. Nevertheless, it won't be difficult to obtain these crystals by heating a mixture of Fluorine and Xenon in a nickel chamber to just 400°C. The result is a few small, soluble crystals. A few small water-soluble crystals are obtained, which sublimate easily. We use a lot of Helium, Krypton and Radon components.

Xenon tetra fluoride is decomposed in the *(D41-6-ideo4)* equipment , i.e. the Xenon passes to the aforementioned toroidal reactor, while the Fluorine is channeled to the regenerator *(D41-ideo4).*

6- ideo5), by first storing it at high pressure in the chamber *(reservoir?)* *(D41-6-ideo6)*

When the engine is stopped, the Xenon gas is recovered through the conduit *(D41-6-ideo7)* to be synthesized back into tetra fluoride in *(D41-6-ideo8).*

The energy created by the plasma chamber *(D41-6-ideo9)*, is channeled to the expander *(expansion chamber?) (D41-6-ideo10)* and it is at this point, where the air previously liquefied by the equipment *(D41-6-ideo11)* and stored in the chamber *(tank?)*. *(D41-6-ideo12)*, expands violently as it is projected downwards through the nozzle (*D41-6-ideo1)*.

The equipment *(D41-6-ideo13)* is a Xenon preheater, and the *(D41-6-ideo14)* is a NUCLEAR ACTIVATOR (TRIGGER) FOR GOONNIAOADOO FORMATION that works on a self resonance basis.

There's a technical reason why we use a Xenon compound instead of pure gas. When decomposition takes place at high temperature, a fraction of its atoms ionize, a phenomenon that does not occur in the free state of this type of inert gas.

APPENDIX 4 The mini tokamak

Tokamak science is about 70 years old.

Wikipedia gives the following introduction to the article on the subject: "A **tokamak is an** experimental magnetic confinement device exploring plasma physics and the possibilities of producing energy by nuclear fusion. There are two types of tokamak with significantly different characteristics: traditional toroidal tokamaks (the subject of this article) and spherical tokamaks. This is a candidate technology for the development of a nuclear fusion power plant operating on the principle of heat exchange with a fluid. First, however, we need to demonstrate with ITER that the energy produced by fusion reactions remains greater than the energy consumed to maintain the plasma in the right conditions (to carry out these fusion reactions).

Invented in the early 1950s by Soviet physicists Igor Tamm and Andrei Sakharov from an original idea by physicist Oleg Lavrentiev, the acronym tokamak comes from the Russian "т о р о и д а л ь н а я камера с магнитными катушками" (*toroidalnaïa kamera s magnitnymi katouchkami* : in French, chambre toroïdale avec bobines magnétiques). More rarely, the spelling *tokomak is used*. The first tokamak, T1, was built at the Kourtchatov Institute in Moscow[1] .

The future ITER tokamak will be 29 meters high, 28 meters in diameter and weigh approximately 23,000 tonnes.

To master the operation of such an object, it is necessary to master plasma physics, and in particular MHD: Magneto Hydro Dynamics.

This complex science has yet to be fully mastered, and all efforts are focused on thermonuclear fusion. Here's a photo of the first French TFR Tokamak from 1973, almost half a century ago, and a 3D representation of ITER.

TFR jouera un rôle essentiel dans l'établissement des principes physiques qui permettront de concevoir le JET et les autres « géants » des années 1980, l'Américain TFTR, le Japonais JT60 et le soviétique T-15.

Maquette de ITER.

The road to nuclear fusion has led to the construction of increasingly gigantic machines, the latest of which is ITER, currently under construction on French soil. ITER's plasma will be heated to between 150 and 300 million degrees!

In other words, neither the miniaturization of such machines nor the study of ion confinement at very low temperatures (0.17 eV or 2000°K) in this kind of magnetic bottle are on the agenda.

In 1993, a number of small tokamaks existed in Brazil and Italy (Plasma Phys Control Fusion 35 (1993) 263-268 Tokamak Thorello), with the aim of studying MHD and developing diagnostics to measure plasma characteristics.

Journal of Fusion Energy, Vol. 12, No. 3, 1993

Tokamak Research at University of São Paulo

I. C. Nascimento,[1] I. L. Caldas,[1] and R. M. O. Galvão[1]

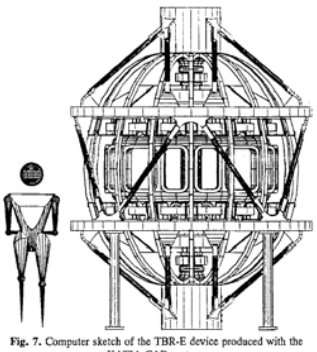


Fig. 7. Computer sketch of the TBR-E device produced with the KATIA CAD system.

As can be seen from the figure above, taken from the Brazilian researchers' article of almost 30 years ago, there's still a lot of work to be done to develop and miniaturize a mini tokamak.

As a conclusion to this appendix 4: developing a mini tokamak as described in letter D 41-6 could take a few decades, provided it is of global interest. I don't think we can talk at this stage of a real basic scientific breakthrough to obtain such an object, but it will certainly require a lot of technological effort.