Upper-order nuclei consist of ${}^2_1H$, ${}^3_1H$, ${}^3_2He$, ${}^4_2He$ and n

Michael Tzoumpas
Mechanical and Electrical Engineer
National Technical University of Athens
Irinis 2, 15234 Athens, Greece

E-mail: m.tzoumpas@gmail.com

November 2020

Abstract. There is no a nucleus with more than two neighboring protons, because the presence of a third proton creates an increased negative potential that exceeds their stability potential, causing a cleaving (beta decay β^+) of this third proton. These two protons are next to each other and due to their opposite magnetic moments they create a column of magnetic field, while a magnetic column is created by the rotated neutrons as well. So, the first phase of the nuclei structure ends in ${}^4_2He$. Of course, protons are immobile, while neutrons are rotating around them. However, how is the second nucleus ${}^4_2He$ added? Apparently having a common axis with the first ${}^4_2He$. But why is beryllium ${}^8_4Be$, with the two superimposed nuclei ${}^4_2He$, unstable? We will prove that column construction is based on the stability of carbon ${}^{12}_6C$ and oxygen ${}^{16}_8O$, which consist of three superimposed nuclei ${}^4_2He$ and four ${}^4_2He$ respectively. Consequently, the structure of the nuclei begins with the so-called lower-order nuclei, as the deuterium ${}^2_1H$, tritium ${}^3_1H$ and helium ${}^3_2He$, which evolve into helium ${}^4_2He$ and then first upper-order oxygen nucleus ${}^{16}_8O$, that has four helium nuclei ${}^4_2He$ in a column of strong negative electric field.

Keywords: Upper-order nuclei; mirror symmetry.

PACS numbers: 03.50.Kk, 12.10.-g

1. General Appearance

According to the unified theory[1,2] of dynamic space the atomic nuclei[3,4] have been structured through two fundamental phenomena.[5] The inverse electric field[6] of the proton and the electric entity of the macroscopically neutral neutron.[7]

There is no nucleus with more than two neighboring protons, because the presence of a third proton creates an increased negative potential that exceeds their stability potential, causing a cleaving[8] (beta decay β^+) of this third proton. These two protons are next to each other and due to their opposite magnetic moments[9] they create a column of magnetic field, while a magnetic column is created by the rotated neutrons as well. So, the first phase of the nuclei structure ends in ${}^4_2He$. Of course, protons are immobile, while neutrons are rotating around them.[8] However, how is the second nucleus ${}^4_2He$ added? Apparently having a common axis with the first ${}^4_2He$. But why is beryllium nucleus[10]

$$ {}^8_4Be = {}^4_2He + {}^4_2He, \tag{1} $$

with the two superimposed ${}^4_2He$ nuclei, unstable? Additionally, beryllium nucleus[10]

$$ {}^9_4Be = {}^4_2He + {}^2_1H + n + {}^2_1H \tag{2} $$

with one ${}^4_2He$,[5] two deuterium nuclei ${}^2_1H$[5] and one bonding neutron[11] is unstable.

We will prove that column construction is based on the stability of carbon[10] ${}^{12}_6C$ and oxygen[10] ${}^{16}_8O$, which consist of three superimposed nuclei ${}^4_2He$ and four ${}^4_2He$ respectively.

Consequently, the structure of the nuclei begins with the so-called lower-order nuclei, as the deuterium ${}^2_1H$, tritium ${}^3_1H$ and helium ${}^3_2He$, which evolve into helium ${}^4_2He$[5] and then first upper-order oxygen nucleus ${}^{16}_8O$, that has four helium nuclei ${}^4_2He$ in a column of strong negative electric field.

The second upper-order calcium nucleus[12] ${}^{40}_{20}Ca$ is based on the fundamental natural phenomenon of mirror symmetry, by repetition of the first upper-order oxygen nucleus and one half of it, i.e. at the 2.5 factor.

The same stands with the third upper-order tin nucleus[13] ${}^{120}_{50}Sn$, which emerged from the second upper-order calcium nucleus, according to the mirror symmetry and the same 2.5 factor.

Furthermore, orion nucleus[14] ${}^{307}_{125}Or$ forecast, as a theoretical construction, is derived by repetition of the third upper-order tin nucleus and one half of it for the connection as the fourth upper-order nucleus, according to the mirror symmetry and the same 2.5 factor.

1.1. Why is beryllium nucleus ${}^8_4Be$ *unstable?*

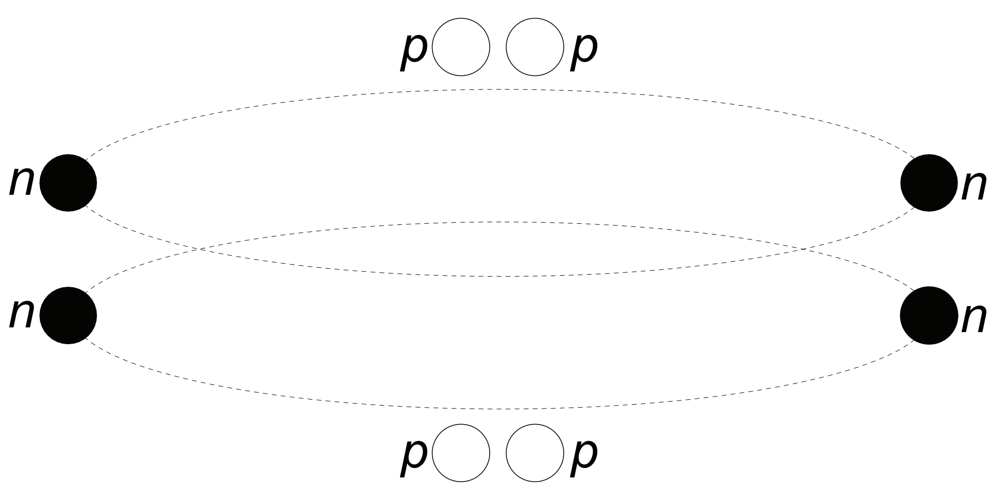

Figure 1. The beryllium ${}^8_4Be = {}^4_2He + {}^4_2He$, consisting of two helium nuclei ${}^4_2He$, is unstable

The very strong negative field of the two pairs coaxial protons of beryllium[10] ${}_{4}^{8}Be$ (Eq. 1) forces the neutron orbits to approach in the middle of the magnetic field column (see section 1), releasing the protons and breaking down this nucleus to two alpha particles- alpha decay (Fig. 1).

Additionally, the presence of the bonding neutron (Eq. 2) is not sufficient to make the beryllium[10] ${}_{4}^{9}Be$ stable.

1.2. The stability of carbon nucleus ${}_{6}^{12}C$

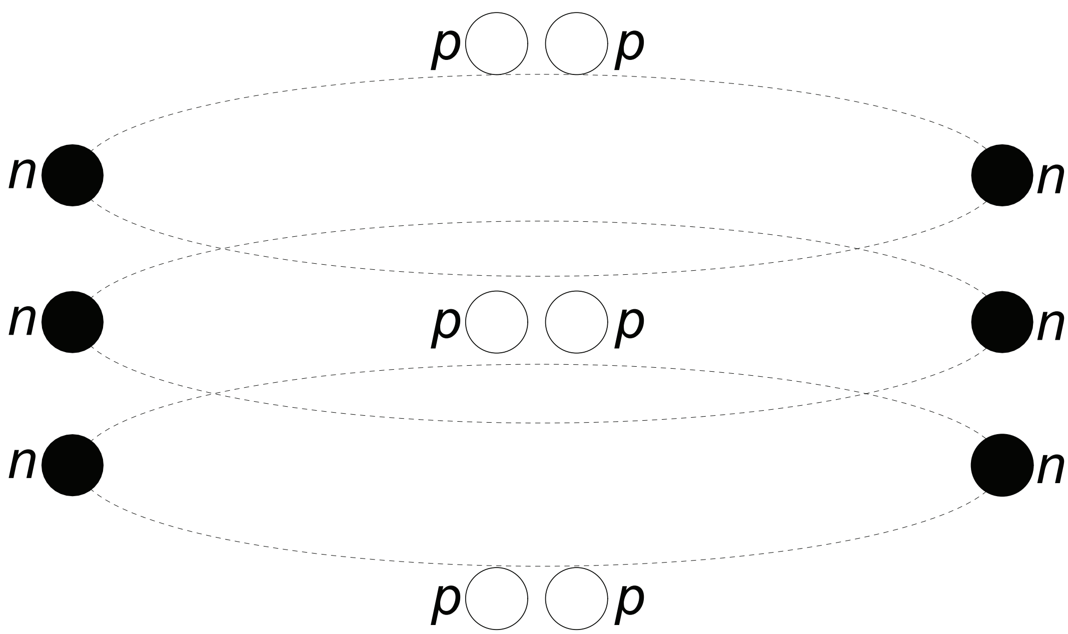

Figure 2. Structural stability of carbon ${}_{6}^{12}C = {}_{2}^{4}He + {}_{2}^{4}He + {}_{2}^{4}He$ is due to the three coaxial helium nuclei ${}_{2}^{4}He$, which cause a polarization

The rotated neutrons of carbon[10]

$$ {}_{6}^{12}C = {}_{2}^{4}He + {}_{2}^{4}He + {}_{2}^{4}He, \tag{3} $$

with their cloud of positive electric units, reduce the strong negativity of the three pairs of coaxial protons, resulting to the symmetrical converging of their orbits that cause a polarization between the central helium nucleus ${}_{2}^{4}He$ and the two extreme ones (Fig. 2). This polarization is the cause of the carbon structural stability with the column of three helium nuclei.

1.3. The stability of first upper-order oxygen nucleus $^{16}_8O$

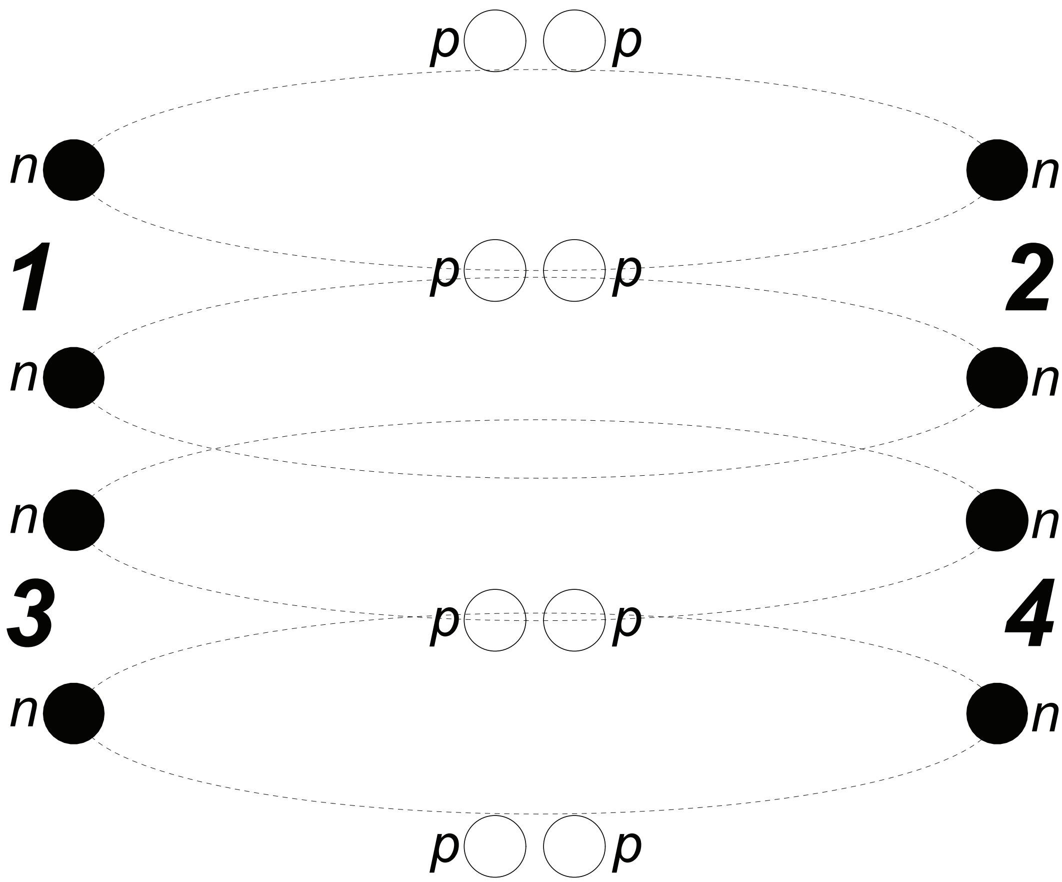

Figure 3. At the four positions 1, 2, 3 and 4 maximum negativity of the oxygen nucleus $^{16}_8O =^4_2 He+^4_2 He+^4_2 He+^4_2 He$ the lower-order nuclei of ^2_1H, ^3_1H and ^3_2He, which evolve into helium ^4_2He, can be attaching. However, one half $\frac{1}{2}\cdot^{16}_8 O$ as a connection between two $^{16}_8O$ can be created, for the structure of calcium nucleus $^{40}_{20}Ca$ (Fig. 4, Eq. 5)

Also, a polarization occurs due to the displacement of the neutron orbits toward the middle of magnetic field column (see section 1), where there is a strong negativity of the oxygen protons, causing alternating increased and decreased negativity. This polarization is the cause of the oxygen[10] structural stability with the column of four helium nuclei

$$^{16}_8O =^4_2 He +^4_2 He +^4_2 He +^4_2 He. \quad (4)$$

So, between the first-second and third-fourth helium nucleus ^4_2He of the oxygen, four positions 1, 2, 3 and 4 (Fig. 3) of maximum negativity are created. The lower-order nuclei of ^2_1H, ^3_1H and ^3_2He, which evolve into helium ^4_2He,[5] can be respectively attached into these four positions.

1.4. The stability of second upper-order calcium nucleus $^{40}_{20}Ca$

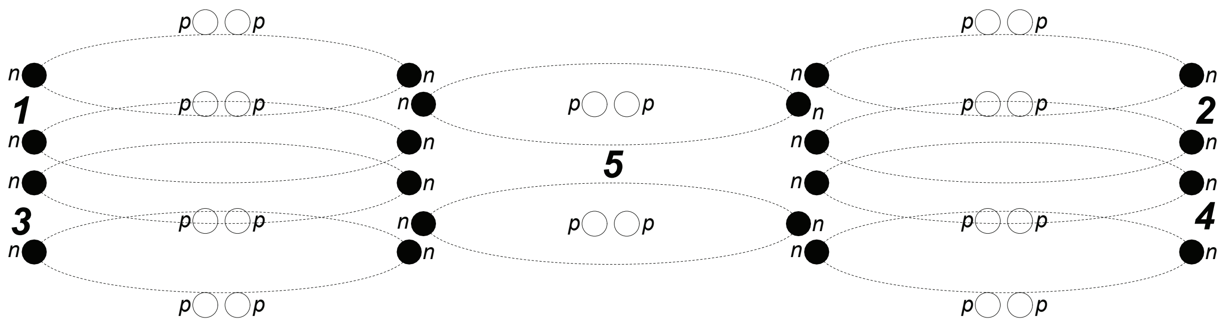

Figure 4. At the five positions 1, 2, 3, 4 and 5 maximum negativity of calcium nucleus $^{40}_{20}Ca =^{16}_{8} O + \frac{1}{2} \cdot^{16}_{8} O +^{16}_{8} O$, one half $\frac{1}{2} \cdot^{40}_{20} Ca$ as a connection between two $^{40}_{20}Ca$ plus twenty orbital bonding neutrons can been created, for the structure of tin nucleus $^{120}_{50}Sn$ (Figs 5 and 6, Eq. 6)

It is remind, the lower-order nuclei of ^2_1H, ^3_1H and ^3_2He, which evolve into helium ^4_2He,[5] to the above four positions 1, 2, 3 and 4 (Fig. 3) maximum negativity (see subsection 1.3) of oxygen nucleus can be attached. However, two helium nuclei ^4_2He, i.e. one half of the four nuclei ^4_2He of oxygen $^{16}_{8}O$, can be attached to the two positions 1, 3 or 2, 4 (Fig. 3) of maximum negativity, but then four helium nuclei ^4_2He can be attached, i.e. a total of $4+2+4=10$ helium nuclei ^4_2He, that structure calcium nucleus[12] (Fig. 4)

$$^{40}_{20}Ca =^{16}_{8} O + 2^4_2He +^{16}_{8} O \Rightarrow^{40}_{20} Ca =^{16}_{8} O + \frac{1}{2} \cdot^{16}_{8} O +^{16}_{8} O. \tag{5}$$

So, oxygen nucleus $^{16}_{8}O$ is multiplied by the factor 2.5 ($4 \cdot 2.5 = 10$) to structure calcium nucleus $^{40}_{20}Ca$ of ten helium nuclei ^4_2He. Therefore, calcium nucleus $^{40}_{20}Ca$ is constructed by the repetition of the oxygen nucleus $^{16}_{8}O$ and one half of it for connection (mirror symmetry/2.5 factor).

1.5. The stability of third upper-order tin nucleus $^{120}_{50}Sn$

At the five positions 1, 2, 3, 4 and 5 (Fig. 4) maximum negativity of calcium nucleus $^{40}_{20}Ca$, one half $\frac{1}{2} \cdot^{40}_{20} Ca$ as a connection between two $^{40}_{20}Ca$ can been created, for the structure of tin nucleus[13] $^{120}_{50}Sn$ (Figs 5 and 6)

$$^{120}_{50}S_n =^{40}_{20} C_a + \frac{1}{2} \cdot^{40}_{20} C_a +^{40}_{20} C_a + 20n. \tag{6}$$

Therefore, tin nucleus $^{120}_{50}Sn$ is constructed by the repetition of the calcium nucleus $^{40}_{20}C_a$ and one half of it for connection (mirror symmetry/2.5 factor), while twenty orbital bonding neutrons[11] are added, which reduce the strong negativity of the protons field and contribute to the stability of the nucleus.

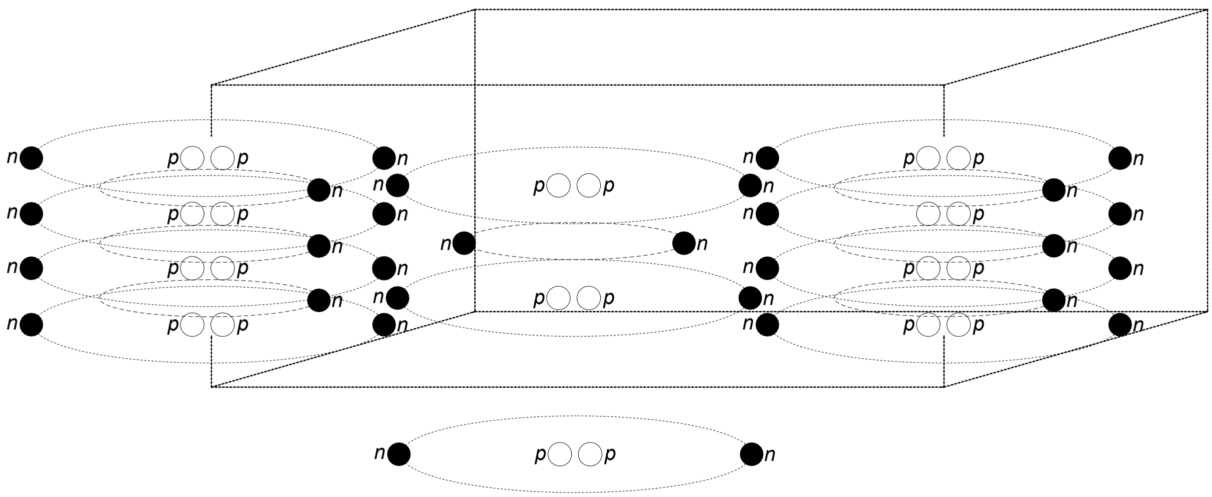

Figure 5. Stereoscopic representation of the tin nucleus ${}^{120}_{50}S_n$, where the same image on the other three sides of the rectangular parallelepiped is repeated, while the lonely helium nucleus ${}^4_2H_e$ is placed in its center

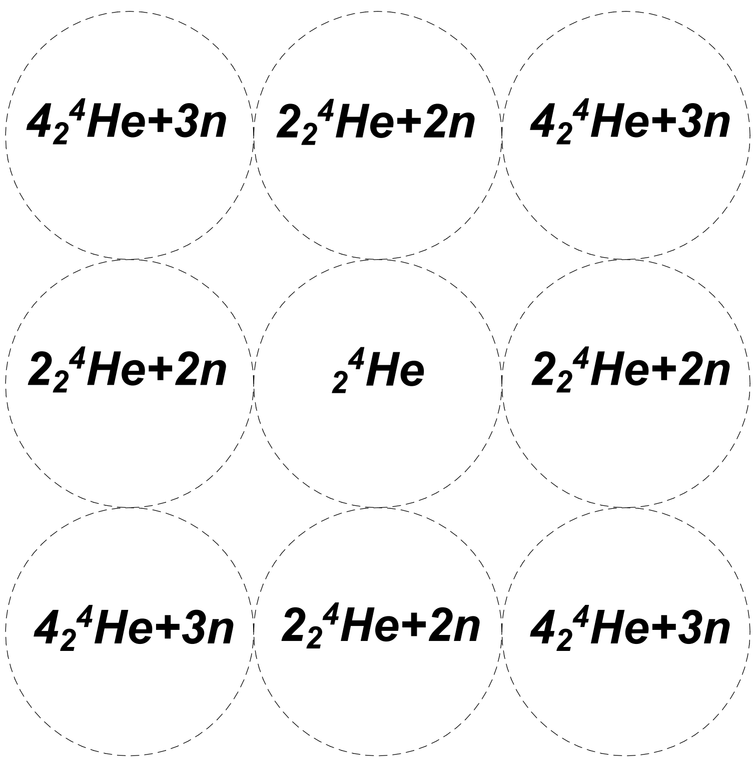

Figure 6. Top view of Fig. 5, where the mirror symmetry of the 2.5 factor for the construction of the tin nucleus ${}^{120}_{50}S_n$ appears

In Fig. 5 it is repeated the same image on the other three sides of the rectangular parallelepiped, while the lonely helium nucleus ${}^4_2H_e$ of the above figure is placed in its center. In Fig. 6, the four corner columns of negative potential appear with the four helium nuclei ${}^4_2H_e$ and the three neutrons each, also the four middle columns of negative potential appear with the two helium nuclei ${}^4_2H_e$ and the two neutrons each, while the lonely helium nucleus ${}^4_2H_e$ appears in the center.

1.6. The limited fourth upper-order orion nucleus ${}^{307}_{125}Or$

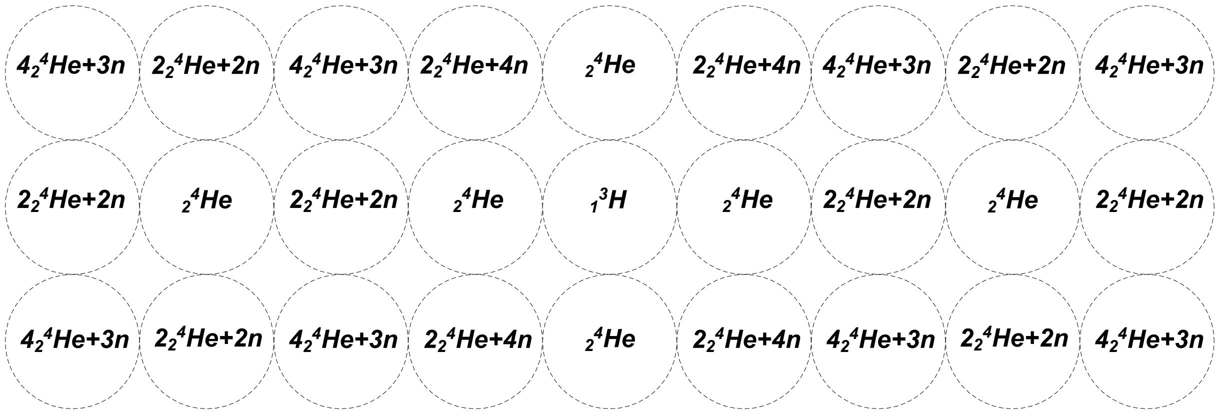

Figure 7. Representation of the fourth upper-order orion nucleus ${}^{307}_{125}Or$, where is constructed by repetition of the third upper-order tin nucleus ${}^{120}_{50}Sn$ and one half of it for the connection (mirror symmetry/2.5 factor)

Orion nucleus forecast[14]

$${}^{307}_{125}Or = {}^{120}_{50}Sn + \frac{1}{2} \cdot {}^{120}_{50}Sn + {}^{120}_{50}Sn + 6n + n, \tag{7}$$

is derived by the repetition of the tin nucleus ${}^{120}_{50}Sn$ and one half of it for the connection as the fourth upper-order nucleus, according to the mirror symmetry, while six orbital bonding neutrons[11] in the middle connection unit ($\frac{1}{2} \cdot {}^{120}_{50}Sn$) are added plus one neutron for the central original deuterium nucleus ${}^2_1H$ (one half of the initial helium nucleus ${}^4_2He$) that evolves into the unstable tritium nucleus ${}^3_1H$ (Fig. 7).

The weak link of orion nucleus ${}^{307}_{125}Or$ is the above unstable tritium nucleus ${}^3_1H$, which is located at its center, where the strong negative electric field of the protons prevails. So, this critical point becomes an attraction pole of neutrons, i.e. of a thermal neutron and rarely of a fast one, which it is cleaved[8] (beta decay β^-), incorporating the produced proton into the tritium nucleus ${}^3_1H$, turning it into helium nucleus ${}^4_2He$. This is the mechanism that acts as a catalyst for the nuclear fission of the theoretical orion nucleus ${}^{307}_{125}Or$, due to which it is considered an unstable nucleus.

However, the word orion, which comes from the Greek $\acute{o}\varrho\iota o\nu$, meaning the limit. Thus, orion nucleus ${}^{307}_{125}Or$ means the limited nucleus of Nature that cannot be further divided, due to the indivisible original deuterium ${}^2_1H$.

Additionally, orion nucleus ${}^{307}_{125}O_r$ is the corresponding hypothetical chemical element with atomic number $Z = 126$ and placeholder symbol Ubh (${}^{310}_{126}Ubh$ or ${}^{354}_{126}Ubh$), also known as element 126 or eka-plutonium.

2. References

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