

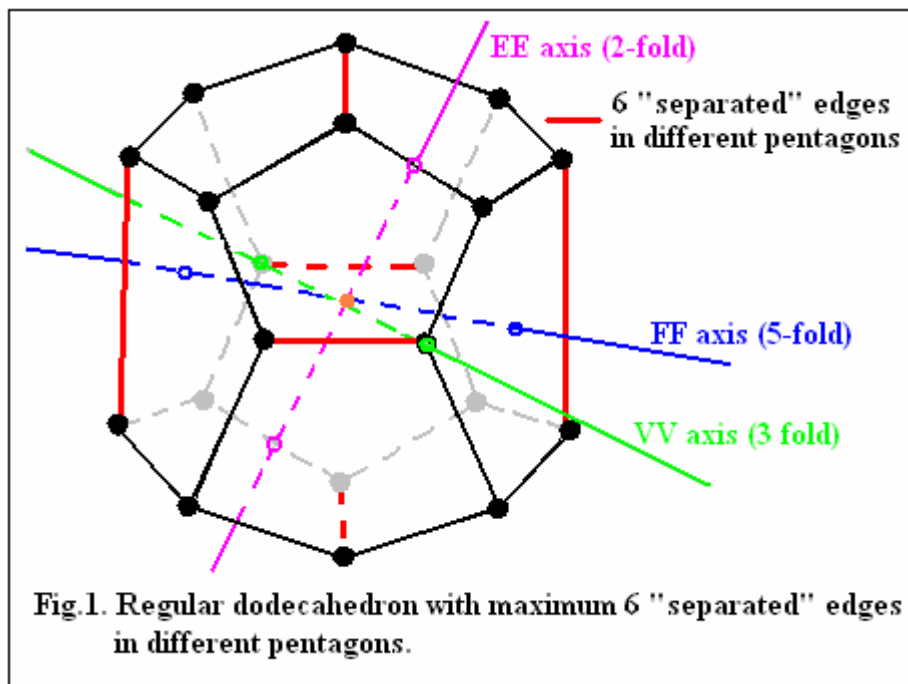
# Dodecahedron as an Encoder of the Theory of Everything

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**Abstract:** The Scale-Symmetric Theory (SST) is the lacking main part of the Theory of Everything (TOE). Here we show that the Gallo-Roman dodecahedron encodes the fundamental ideas on which the SST is based. It suggests contacts between earthly civilizations and representatives of advanced cosmic civilizations.

## 1. Introduction

Regular dodecahedron consists of 12 faces that are pentagons, 20 vertices and 30 edges (Fig.1). Each pentagon has 5 edges but notice that each edge belongs to two pentagons.



On the other hand, the Scale-Symmetric Theory (SST) [1] starts from the simplest scenery: there are the superluminal pieces of space without internal structure (the SST tachyons) that are moving in truly empty volume and interact due to the simplest interaction, i.e. the viscous force that is a result of smoothness of surfaces of the tachyons.

It leads to the two-component spacetime (the SST Higgs field composed of tachyons plus the SST absolute spacetime composed of the spin-1 very stable neutrino-antineutrino pairs) and 11 initial parameters. There are 5 basic levels of Nature that are represented by 5 different objects with different sizes. Equators of all of them are the circles. The smallest object is the SST tachyon that is a regular ball. Next one is the entanglon that is the binary system of physical circles (it is responsible for the quantum entanglement and is built of the tachyons).

The third object is the core of the lightest neutrinos that are built of the entanglons immersed in the SST Higgs field, so neutrinos acquire their gravitational mass. Next is the core of the baryons composed of the binary systems of neutrinos. The fifth element is the core of the Protoworld that leads to new cosmology. Notice that the first 2 objects are superluminal while the last 3 objects/cores are dual because they consist of a torus and central condensate.

Within SST we obtained thousands of theoretical results that are consistent with experimental data. The only one unanswered basic question is: why there are pieces of space without internal structure instead of nothing. But it can be a rhetoric question. Can we really address the problem?

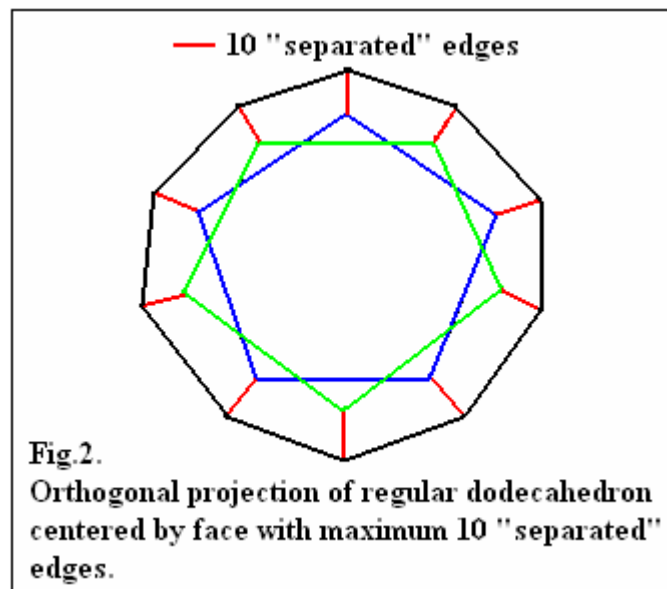
Here we showed many very important dodecahedron-SST relationships that prove that dodecahedron encodes basic ideas on which the lacking most important part of the TOE is based.

## 2. The dodecahedron-SST relationships

\*In SST we have the two-component spacetime with 30 degrees of freedom and the first fundamental component, i.e. the Higgs field, has 6 degrees of freedom ( $30 = 6 + 24$ ). On the other hand, we can divide the 30 edges of regular dodecahedron into two sets containing 6 edges and 24 edges – just regular dodecahedron has maximum 6 “separated” edges when 2 or more of them do not belong to the same pentagon (see Fig.1). In SST, the ground state of the SST absolute spacetime (it is the second component of the two-component spacetime) has 24 degrees of freedom.

\*The SST tachyons also have 6 degrees of freedom - it correlates with the 6 face-opposite.face (FF) axes of rotation (see Fig.1).

\*The entanglons have 10 degrees of freedom - it correlates with the 10 vortex-opposite.vortex (VV) axes of rotation (see Fig.1). Moreover, when the “separated” edges can belong to the same pentagon then there are maximum 10 such edges in a dodecahedron (see Fig.2).



\*The entanglons and the components of the SST absolute spacetime are the binary systems so we can consider the pairs of faces, of vertices and edges. We have 6 pairs of faces, 10 pairs of vertices and 15 pairs of edges, i.e.  $6 + 10 + 15 = 31$  pairs. Among the first 31 natural numbers we have 11 prime numbers (2, 3, 5, 7, 11, 13, 17, 19, 23, 29 and 31). On the other hand, in SST, we have 11 parameters.

\*The edge-opposite.edge axis of rotation we will call the EE axis of rotation. In regular dodecahedron, the FF axes have 5-fold rotational symmetry, the VV axes have 3-fold rotational symmetry and the EE axes have 2-fold rotational symmetry, so we have  $5 = 3 + 2$  (see Fig 1). On the other hand, in SST, the 5 fundamental objects are divided into two sets because there are the 3 dual objects (torus plus central condensate) and 2 superluminal objects (tachyon and entanglon).

\*A total symmetry order of regular dodecahedron is 120. On the other hand, in SST, the ground state of the core of the Protoworld (the biggest fundamental object) has 120 degrees of freedom.

\*Most important is the fact that the Gallo-Roman dodecahedron has 12 faces that are the pentagons (each has 5 edges/sides) and there are the circular holes with different sizes/scales (see Fig.3). Notice also that among the first 12 natural numbers there are 5 prime numbers (2, 3, 5, 7 and 11). It suggests that the number 5 (i.e. 5 edges, 5 prime numbers, 5-fold rotational symmetry for the FF axes) and the different scales of the circular holes are distinguished. On the other hand, in SST, we have the 5 basic levels of Nature that are represented by 5 different objects with different sizes – it is the fundamental pillar of SST. Equators of all of them are the circles with different scales of their radii – hence the name of the missing essential part of the theory of everything, i.e. the so-called Scale-Symmetric Theory.

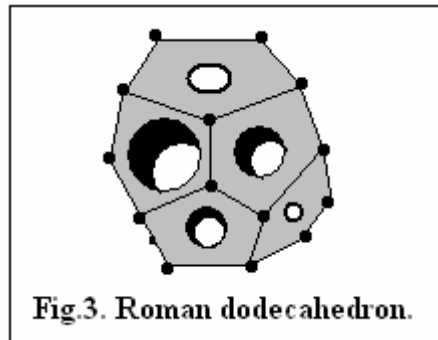


Fig.3. Roman dodecahedron.

### 3. Summary

Researchers are trying to understand the origin of the Gallo-Roman dodecahedron but it is still a great mystery.

Very frequently it is assumed that regular dodecahedron represents the shape of the Universe as a whole but we see that it is not true.

We showed that the regular dodecahedron and the Gallo-Roman dodecahedron were used to encode the main ideas on which the theory of everything should be based.

**We showed that to find an artefact of the TOE/SST that is based on the two-component spacetime, i.e. on the Higgs field with 6 degrees of freedom and on the absolute spacetime with 24 degrees of freedom in its ground state (i.e.  $30 = 6 + 24$ ), we need a solid that has 30 edges with 6 “separated” edges not belonging to the same pentagon (or 6 face-opposite.face axes). It leads directly to a regular dodecahedron with faces that are pentagons. The 5 edges of each pentagon represent the 5 fundamental levels of Nature that appear in TOE/SST.**

The circular holes with different sizes in the pentagons of the Gallo-Roman dodecahedron lead to the Scale-Symmetric Theory with 5 fundamental scales that appeared due to the initial turbulent inflation and initial evolution of early Cosmos – there are mathematical formulae that combine the sizes and masses of the 5 fundamental objects.

Here we showed a great dodecahedron-SST correlation. The probability that such a great correlation between the Gallo-Roman dodecahedron and the foundations of the ultimate theory was the result of chance, especially those circular holes of different sizes in the pentagons, is practically zero, so this artefact, i.e. the Gallo-Roman dodecahedron, must have been inspired by an extraterrestrial civilization.

### References

- [1] Sylwester Kornowski (7 October 2022). "Particles, Cosmology and Applications: Scale-Symmetric Theory (SST)"  
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