

Fusion Energy: On the track of a different philosophy and solution

Joao Ferro (✉ ferrojpf@gmail.com)

N.A.

Article

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Abstract

When two (or more) nuclei fuse, to form a heavier element, a known quantity of energy is released. The process seems easily to be described, at least to some degree. And the today technological development on the subject has been introducing applications in many areas. Even so, there are some challenges before we can be able to provide energy by an appropriated fusion process: high needs of power, plasma confinement issues, heavy equipment, etc.

The present idea intends to show a different view. The author calls, in a broad sense, a Conceptual Thesis, and it has the Natural Language as principal tool. The author either explicitly or implicitly discusses the space-time fabric, double-slit experiment, and other concepts like non-duality. One nano-apparatus draft with the purpose to be in the scope of a near future research, closes the picture.

1. Introduction

Fusion, with the production of a large amount of energy is a technology that can be used in an advantageous way by our society and be a factor to contribute to the natural balance of the environment.

This study aims to present a possible compromising answer about a different physical-theoretical system. The model is supported by a conceptual thesis/thought, precursor of a probable more wide-reaching symbolic-informative relational theory.

The idea under test is that atomic particles can be fused not by a process where the Coulomb barrier is overcome, but the particles, under certain conditions, or rather, by altering and/or maintaining certain properties (connectedness), can break the space-time fabric, find themselves at an undefined point (non-dual and/or suspended from their space-time frame), and finally return to the real state, whose paradigm rests on a distinction of the particles properties, with the release of energy.

General process. It is considered one antagonistic property of the particles to be resolved. If the environment is, say, equivalent, and the particles are placed in a right configuration in the apparatus, then one opposite property remains, and the particles can start the fusion process. (One antagonistic property is the way to say, yes and no – with the purpose of produce Non-duality in a conceptual approach.) After non-duality happens and after the return to the three-dimensional frame, the particles are approximately one, i.e., they become, by principle, bonded.

Process: rupture of the space-time fabric. The particles are disconnected from the space-time fabric of numerical quality. (Space-time is considered intrinsically of numerical quality.)

As particles start to become identified as one, means a rupture of space-time: the numbers of their initial 3D space-time tend to be equals conceptually – concept of independent number ceases to exist.

Process: Non-duality. An element exists with property (or response) that eliminate the antagonism: it induces in the system a conceptual change. This conceptual change is viewed as the loss of differentiation of the particles – particles are identified with a single property (in this case study, distance – Fig. 1). What the author calls weak and strong reference (Fig. 4), are fundamental for this change to happens.

Applying the system of the apparatus (which will permit such all process) by setting it for initial conditions, the particle(s) return to the three-dimensional frame.

2. Objective

One different approach on the fusion process is reported with the aim of further research to take place in the labs. For the case:

- o The paper introduces some philosophical concepts into the physics of nuclear fusion.
- o A first draft of a nano-device for produce of energy by the fusion process is presented.

3. Method

Apart of what was said above, the qualitative approach can be resumed by the following.

The double-slit experiment was revisited considering a role for information. It results a simple scheme shown in fig. 1, 2. Accordingly, space-time was resolved as two dimensions plus time, in a conceptual understanding or description of it. With this view of space-time fabric, the idea of a particle losing its time by suppressing its Z-Axis, starts the journey to design the device. The device accomplishes the points written for the process. A representation of the device and some conceptual notions of the process can be viewed on Thought Results.

4. Thought Results

The double-slit experiment interpreted as one particle in all the path (and not a wave), and only considering particles with mass behaving in this way. The informational line has constant speed. (Particle's maximum kinetic energy before a conceptual change occurs?)

Below, one can observe a particle, changing from the probably most intuitive path to a not so intuitive one, at the node and due to its lower initial velocity.

Space-time fabric with three dimensions: space with two dimensions, plus time, in a pure conceptual approach. Z-Axis and time are identical concepts considering that one can figure out the position, having knowledge of initial velocity, time, and the two-dimensional path.

If space-time is suppressed, connectedness between particles changes. This is achieved by return to 0 on Z-Axis of the nano-device, where are set again the initial conditions of the particles.

Nano-device draft. A simple scheme of a device: the device carries particles, and two references are built in: a Weak Reference (WR), a Strong Reference (SR). The process starts with the top of the coupled parts in position P1. SR and WR switched on. As soon movement 1 happens SR decreases. At position P2, SR switches off and movement 2 takes place (Ring and WR are displaced at same time) with WR intermittent. When Ring arrives to position P1, WR switches off and moves in the opposite way (movement 3) until stops at P1. The SR and WR switch on.

The atoms of type A are differentiated by the intervention of the type A ions, meaning the electrons, conceptually, distinct of the nucleus. Is now considered that the atoms do not need to be ionized.

The energy can be controlled by the quantity of atoms to be used in the process.

5. Discussion

The double-slit experiment is an exercise for the purpose of building the nano-device. No experiments (simulation or real) were done. The thought experiments are well reasoned. The main doubt is if the expected results are in accordance with the well distributed wave function results.

The device is novel in theory, and itself represents a possible shift in the understanding of some important concepts. There is no reference to the materials to be used (its design only must be observed after other positive conclusions of this study). With the using of the latest technology, is possible to achieve a good result.

The proposal presented must be subject of further research, and experimental results are of extreme importance.

6. Conclusions

A coherent model of a fusion energy device and all considered different theories, seems to work conceptually. Some of them are not fully developed.

The language used, lacks formal aspects, but important to design the device.

In the author opinion, is an advantage to present this article at this stage, once one can prove or disprove the contents, and contribute to a better understanding of Fusion and Nature.

Declarations

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Author Contributions

João Pedro Ferro is the single author and there are not external contributions.

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Data availability

Data availability is not applicable to this article as no tangible data were created or analysed in this study.

References

References are not applicable to this study as it is entirely original. Only general previous reading was made.

Please note that 2+1 space-time fabric has been worked in the study of black holes and other cosmological studies; there exist some notions of space-time fabric rupture, but not systematised to become a theory.

Figures

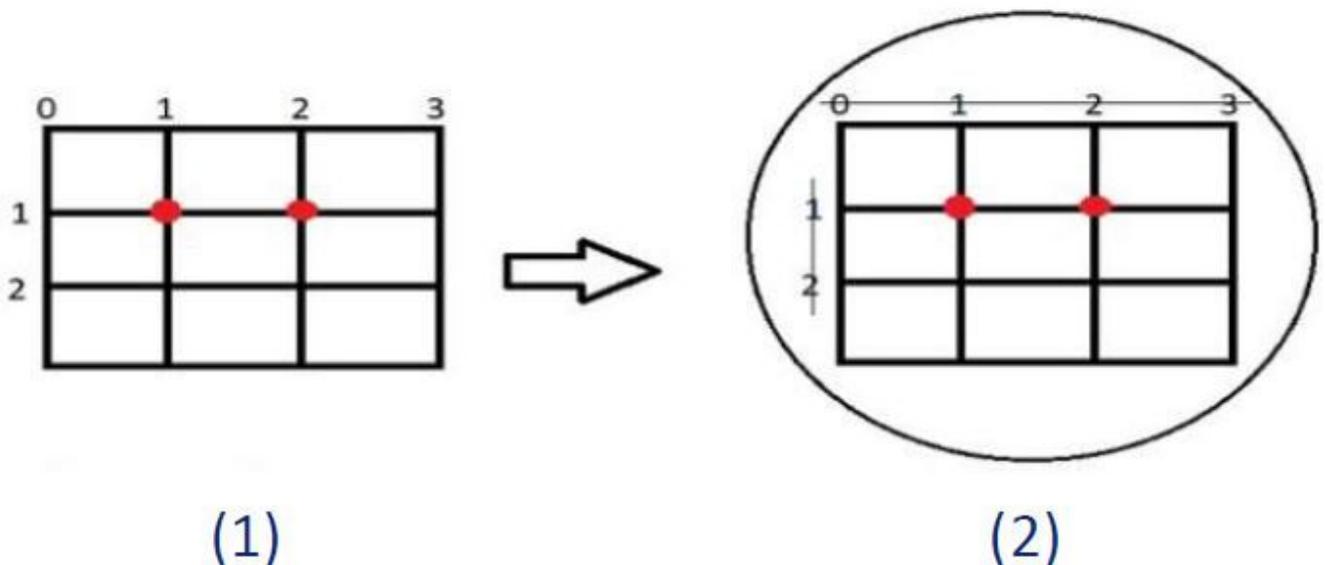


Figure 1

Change on the reference of the particles. (1) Two similar particles with reference: the property position is known; (2) Two similar particles without reference: the property distance is the same (by definition).

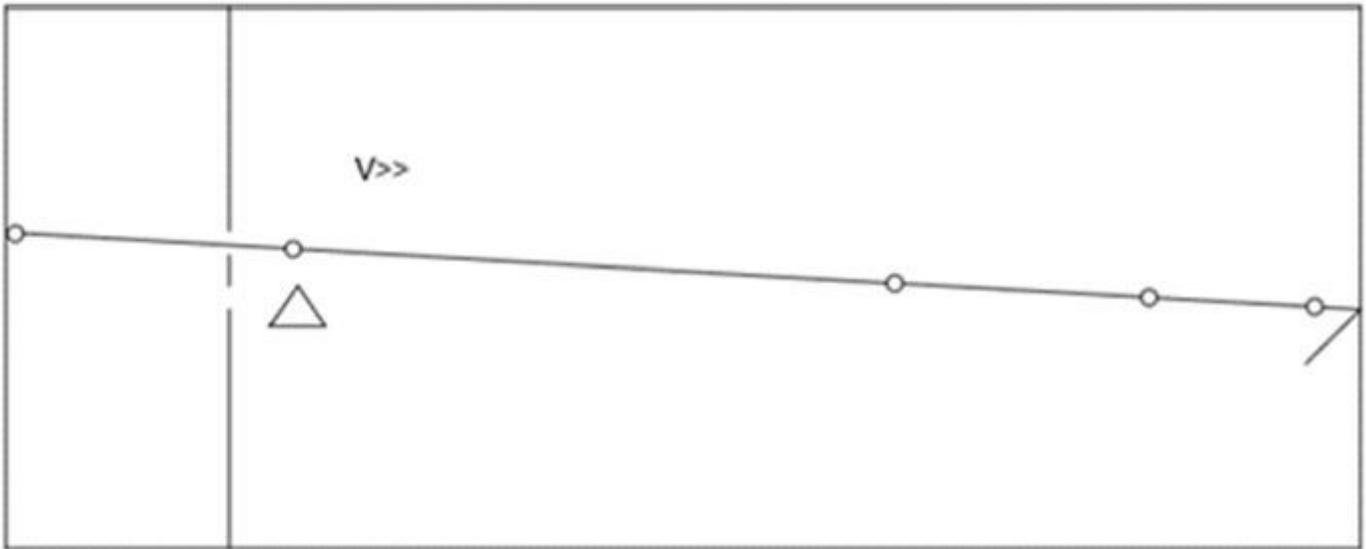


Figure 2

Double-slit thought experiment (view from top): the particle (an atom) gains momentum transmitted by the detector and its velocity increases.

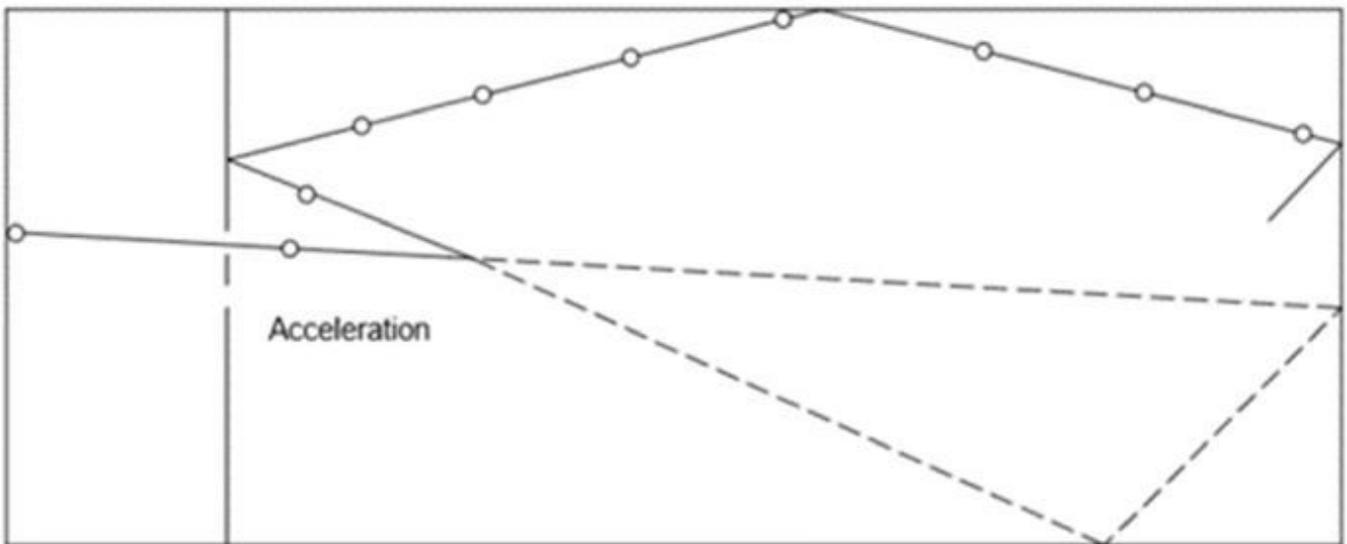


Figure 3

Double-slit thought experiment (view from top): the particle (an atom) moving slower than its informational line, is pulled to the node where the line crosses – acceleration; time updated at node; the

particle does not take the dashed path.