Bijective Epistemology, Higgs mechanism and Higgs boson

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Abstract

Bijective epistemology requires that each element in the scientific model correspond exactly one element in the physical world. Bijective epistemology is based on bijective function of set theory where each element in a given *set model* correspond exactly one element in a given *set physical world*. Higgs boson is an artificially made particle with extremely short life time and has no existence in physical world. Higgs mechanism is an element of *set model* which has no Higgs boson as an element in *set physical world* because Higgs boson does not exist in physical world. Higgs mechanism as an element of *set model* has its counterpart in *set physical world* in some other element which generates inertial and gravitational mass which are inseparable.

Key words: Higgs mechnism, Higgs boson, Bijective epistemology

1. Introduction

Higgs mechanism is a theoretical model which descibes origin of mass of elementary particles. In Bijective epistemology each model in set model Y corresponds exactly one element in set universe X [1]. Higgs mechanism Hm_Y is an element in set model Y :

$$Y : \ Hm_Y \qquad (1).$$

Higgs boson is an artificially made particle with a lifetime 10^{-22} second and does not exist in a physical universe on its own. Higgs boson existence is created by collision of two protons. That's why Higgs boson Hb_X is an artificial element of set model universe X :

$$X : \ Hb_X \qquad (2).$$

Between Higgs boson Hb_X as an artificial element of set physical universe X and Higgs mechanism Hm_Y as an element of set model Y there is no bijective function:

$$f : X \rightarrow Y \qquad (3),$$

because Higgs boson does not exist in physical universe on its own. Higgs boson is not a consistent part of the set physical world X as for example is proton. Higgs boson is "made up" by technology. Between Higgs boson and Higgs field there is no direct epistemological correspondence.

2. Higgs mechanism and variable energy density of quantum vacuum

In our model of dynamic quantum vacuum Higgs mechanism model Hm_Y describes actual energy density of quantum vacuum which is diminished because of presence of a given particle or massive object. This model is valid from the photon scale to the scale of the galaxy. Inertial mass and gravitational mass have both origin in diminished energy density of quantum vacuum [2].

Few other papers expose "weakness" of Higgs mechanism [3] and epistemological weakness of the idea that Higgs boson has its inherent mass [4]. In our model inertial mass and gravitational mass are epistemologically inseparable and have the same origin [2].

3. Conclusions

Higgs boson is not more than a characteristic flux of quantum vacuum energy which is released by collision of two protons. Presenting Higgs boson as a particle that gives mass to other particles is epistemologically inadmissible. Explanation of mass and gravity requires introduction of quantum vacuum as a fundamental arena of the universe.

References:

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