Finding *Higgs boson* /assessment on process based approach/

Higgs boson is not a particle rather a *quantum impact*.
Higgs boson is the integrated effect of the *Strong Interrelation*.
The measured in LHC experiments *Higgs boson* is the quantum impact of the disrupted and newly established *Strong Interrelation* of particles (processes) of the collision.

Background

The assessment is prepared on the basics of mass-energy balance and entropy principle with the key assumption that elementary particles are *all* processes.
In process based approach *relativity* is fully applied, the complete use of which is still missing from modern *quantum physics*, causing concerns in the understanding of facts and findings of experiments.

Main concerns relate to the definition of *time* as such, as it is only applicable if particles are taken as processes. Results of high speed collisions cannot be explained and described in correct way without taking consideration of the time impact.

Protons, *neutrons* and the electron function with *electrons*, *muons* and *tau* are processes; as are also *quarks* of all flavors as well.
Strong Interrelation means the mass-energy balance of the proton and neutron processes under the control of the electron function. Electron function (including *electron*, *muon* and *tau* processes) represents the *Weak Interrelation*, impacting the *Quantum System of Reference*, loading it into *Quantum Membrane*.

Quantum is the entropy value of the continuous proton-neutron mass energy balance process, the *Strong Interrelation*. There are neither flying photons nor flying gluons in the elementary world as the *Standard Model* proposes it. Rather *Quantum Membrane* as the loaded *Quantum System of Reference* transfers all impacts. *Quantum* does not take and does not give off energy and mass: quantum transfers the impact without change in any direction.

Definitions of the *Quantum System of Reference* and the *Quantum Membrane* save modern physical science from the ideas of the definition of *Dark Matter* and the *Dark Energy*.

“Particles” have been found and their impacts measured in high speed experiments because the time system of elementary processes was *slowed down* this way by the motion, giving chance with their increased intensity to be measured in our time system.

$$dt_i = \frac{dt_e}{\sqrt{1-(v^2/c^2)}}; \quad \text{and} \quad dt_e = dt_i\sqrt{1-\frac{v^2}{c}}$$

the correct time formula is reciprocal to the *Einstein* time formula

where dt_i means the time system of the electron process of the experiment, in motion close to c the actual speed of quantum communication;
dt_e is our time system of the experiment on the surface of the *Earth*.
$dt_e << dt_i$ - for this reason, elementary events might be measured as particles indeed in *Earth* circumstances

Quarks represent certain internal statuses of the infinite cycle of proton-electron-neutron processes. Proton process is with *top-charm-up* process line dominance, neutron process is with *down-strange-bottom* process line dominance.

Down-strange-bottom-top-charm-up-…-down-strange …processes are measured in line with the intensities of their mass effect: the less the intensity of the impact is, the longer is the possibility to measure the event. Therefore there is no surprise that the less intensive processes (as *down* and *up* are) are measured more often as they are much longer measurable than others with higher intensity.

The same intensity principle relates to the measurement of leptons, the *electron-muon-tau* process chain as well, each of which is of the same electron function of the *Weak Interrelation*. Just they happen with different intensities, therefore with different options for being detected and measured.
Electron process is with less value of intensity, therefore mainly measured as drive of the neutron process of the *Strong Interrelation*.

This relates in similar way to *neutrinos a*s well. *Neutrinos* as processes belong to all three electron functions: they are deviation indicators of the mass-energy balance of proton-electron-neutron processes at electron function level.
The *Strong Interrelation* is the one, which generates electron functions (and neutrino's), as the electron function follows the proton process.

Standard Model defines W^+, W^- and Z^o bosons as intermediate vector bosons of the *Weak Force*. Instead *W* and *Z* bosons are processes of the mass-energy transfer of the *Strong Interrelation* between internal and external quark processes of protons and neutrons. We can call them as intermediating vector bosons, but the meaning should be clear.
In the case of *W* and *Z* cause and effect have been changed.

W and *Z* bosons are not about electron function and neutrinos, rather they are the elementary tools of the working *Strong Interrelation*, representing the energy and mass transfer and mass-energy balance between proton and neutron processes.
This explanation correlates very well with the findings that the half lifetime of both these "bosons" is about $3x10^{-25}$ sec. This is the impact-response of the contiously working *Strong Interrelation* when a disruption happens within the mass-energy balance of protons and neutron processes, result of high speed collision.
W bosons as processes are acting between hadrons, and are directed from proton to neutron and from anti-neutron to anti-proton.
Z is acting at internal elementary balance level of hadrons and anti-hadrons, and always directed to the direction of the decreasing mass-energy gradient.

Proton process is sphere symmetrical expanding acceleration from $\lim v = 0$ to $i = \lim a\Delta t = c$	With *entropy* and this way *quantum* generating inflexion point between the two.
Neutron process is sphere symmetrical accelerating collapse from $i = \lim a\Delta t = c$ to $\lim v = 0$	

Blue shift impact of the electron function (similar to *bremsstrahlung radiation* in conventional terms) *is* the basic of the *Weak Interrelation.* This is in fact a *blue shift* impact to the *Quantum System of Reference* made by *electron*, *muon* or *tau* process, each of them representing the same electron process *blue shift* function, sphere symmetrical expanding acceleration processes for infinite time.

The definition of *particles* and *anti-particles* is missing the main point in the conventional understanding of quantum physics:

> if a process with *decreasing* gradient of mass-energy intensity – giving off or taken "energy" – is called *particle*; similar process just with *increasing* mass-energy intensity – is called anti-particle.

The direction of the gradient of the change determines the "normal" and "anti-" statuses.

Findings

Higgs boson is not a particle rather a *quantum impact*.
Higgs boson is the quantum impact of the disrupted and newly establishing *Strong Interrelation,* result of the conflict of the colliding or quasi colliding processes.

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The mass-energy balance between quark processes of proton and neutron functions of elements is continuous and permanent.
If this balance has been destroyed by the collision within LHC, it is re-establishing immediately, since no proton function can exist without neutron function.
This re-establishing energy communication is the impact to the *Quantum Membrane* of the colliding tunnel. This impact is obviously measured via $\gamma\,\gamma$ jets, as they are quantum impact indeed.

> [γ and γ are not flying photons as supposed to be by the measurement, but massive quantum energy impacts, transferred to the detectors of the measurement by the *Quantum Membrane* of LHC. There are no flying particles. The quantum impact is propagating within the *Quantum System of Reference*, transferred by the *Quantum Membrane.*]

The disruption of the balance needs at least two interfering and colliding "particles". Therefore the two *gamma* jets generated as signals of the two destructions.

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The quantum impact of the *Strong Interrelation* is working in three different ways:

(a) It is generated as quantum impact energy cover, acting from the quark processes of the proton process to the quark processes of the neutron process. This energy transfer process in conventional terms has been addressed as W^+ boson force.
(b) It is generated as quantum impact energy cover, acting from the anti-quark processes of the anti-neutron process to the anti-quark processes of the anti-proton process. This process in conventional terms has been named as W^- boson force.
(c) It is generated within the internal processes of hadrons, acting from the (t-c-u) quark process chain to (d-s-b) in protons and neutrons; and from (b-s-d) quark process chain to the (u-c-t) in anti-neutrons and anti-protons. This quantum energy cover in conventional terms is identified as Z boson force.

> [Contrary to the conventional understanding W^+, W^- and Z bosons are the tools of the mass-energy balance and transfer of the *Strong Interrelation*.]

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Quantum energy cover from the proton process of the *Strong Interrelation* needs neutron collapse demand. The neutron collapse however works only if it is driven. The drive is the processes of the electron function, leptons of different intensities (*electron*, *muon*, *tau*).
As keys to the re-establishment of the *Strong Interrelation*, leptons are acting in both destroyed elementary structures of the particles in collision, driving neutron collapse the most intensive way. Leptons drive the (d-s-b) quark process chain, rehabilitating with that the quantum energy cover of the elements. In anti-quark processes the (b-c-d) chain is the one which is driven but with decreasing energy accumulation gradient.
As leptons are products of the proton process, the internal elementary balance may need corrections. The appearing forms of the correction are the measured *neutrinos*.

> [Contrary to the conventional understanding, leptons (the *Weak Interrelation*) are the process drives, initiating W^+, W^- and Z boson, the forces of the *Strong Interrelation*.]

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For providing an "emergency" (as quick and intensive as possible) drive for re-establishing the natural elementary balance of the *Strong Interrelation* of the destroyed by the collision hadron processes, *tau* process is the most intensive electron function. And the most intensive collapse to be driven in quark processes ends by *bottom* quark process.
Therefore there is no surprise their impacts have been found at the detectors.
In anti-quark circumstances, quark process chain ending by *top* quark as it is the most energy intensive process.

Conclusion

Higgs boson is a process, the integrated effect of the *Strong Interrelation*.

The two *gamma* signals, the *4 leptons*, the *WW* and *ZZ* findings, the *tau-tau* and *bottom-bottom* quark processes, all in parallel prove it. (The only missing signal is the *top-top* processes, the other most intensive process of the anti-quark process chain of the *Strong Interrelation*.)

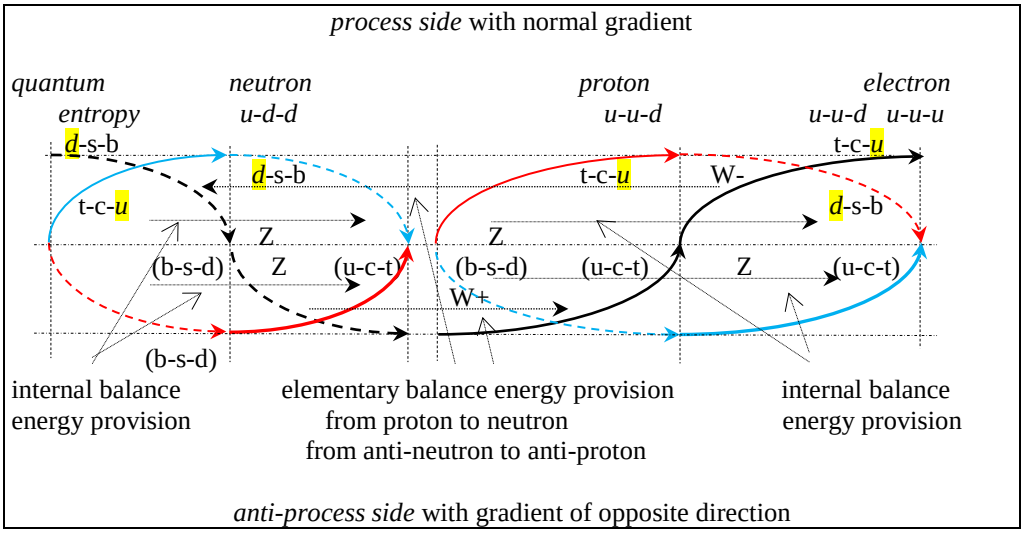
The sum of the absolute values generated by *W* and *Z* bosons – within processes and anti-processes going in parallel – nearly gives the value of the *Higgs boson*, doubled in the equation – as acting for the processes and the anti-processes as well

$$\left|W^+\right| + \left|W^-\right| + \left|Z\right| \cong \left|2H\right|$$

Absolute values shall be taken as normal. Anti-processes relate only to the gradient of the change. The energy itself is provided.

There is an important comment to the conclusions.
The massive magnetic field of the electron function from the huge magnets for acceleration results in increased *blue shift* conflict in the LCH channel.
The *blue shift* conflict is an overload to the *Quantum Membrane* and results in increased *c*, in increased speed of quantum communication.

The diagram on the next page presents the chain of quark processes within proton / neutron and anti-proton / anti-neutron relations.


process side with normal gradient
quantum entropy
neutron u-d-d
proton u-u-d
electron u-u-d u-u-u
d-s-b
t-c-u
d-s-b
t-c-u
W-
t-c-u
d-s-b
Z
Z
Z
(b-s-d)
Z
(u-c-t)
(b-s-d)
(u-c-t)
(u-c-t)
W+
(b-s-d)
internal balance energy provision
elementary balance energy provision from proton to neutron from anti-neutron to anti-proton
internal balance energy provision
anti-process side with gradient of opposite direction