Aggregation states physics. Are we allowed to predict the future of science?

Science and Religion Dialogue group

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Traditional aggregation states physics

- Traditionally: four states of matter: plasm, gas, liquid, solid
  - First maybe observed for water, then maybe metals, then ...
  - https://en.wikipedia.org/wiki/State_of_matter
  - Phase transitions; new phenomena: superconductivity, etc.
- In Antiquity, classical elements in Greece:
  - Fire, air, water, earth;
- Trying to establish correspondence between both:
  - Earth – solid state;
  - Water – liquid state;
  - Air – gas state;
  - Fire – plasm state.
- Let us state this zero step in our prediction: ground physical states of matter

Pentaquark: https://en.wikipedia.org/wiki/Pentaquark

- Pentaquark, a completely new discipline: birthday, 13rd July, 2015.
- **The rise and fall of the pentaquark**
  - **Starting from 2003 searches after pentaquark:**
  - **http://news.bbc.co.uk/2/hi/science/nature/3034754.stm**
  - **2006 year prediction that the hypothesis has failed**
  - **http://www.symmetrymagazine.org/article/september-2006/the-rise-and-fall-of-the-pentaquark**

  - Second step of prediction: pentaquark.

Water is Not H_2O

- http://www.phil.upenn.edu/~weisberg/papers/waterfinal.pdf
- Taking drop of water, assumingly counting atoms, we should get n oxygen and 2n hydrogen atoms, but we get less hydrogen atoms actually: why?
- My formulation of the phenomenon: Water (drop of) is aggregation of n plus less then 2n oxygen and hydrogen atoms correspondingly.
  - Water is not (naively) set of molecules, water is aggregation of atoms of oxygen and hydrogen. It is a collective state of atoms, i.e., in analogy with physical states, similar to plasm, that is collective assambly of particles, as it was observed, particularly marked by David Boem.

- second step of prediction: Water is Not H_2O

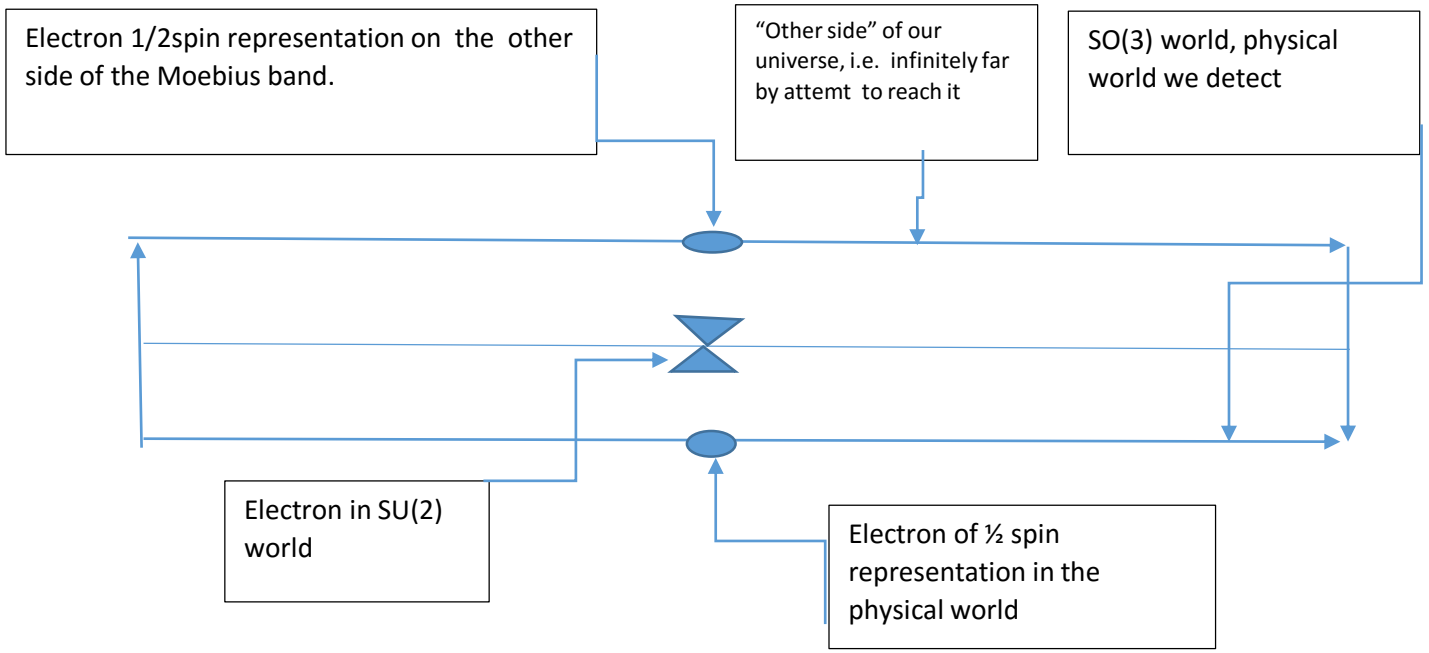
Quarks are six, maybe links? between something four in number.

- What could possibly be these «base elements» that has quarks as links between them?
  - Before knowing anything about them let us call them, say, air, fire, water, earth.
  - We need a new topology
  - We could go even further and suggest «one side universe model» [1], see next slide.
  - With what follows we could explain the presence of dark matter in the universe.

- Third step of prediction: quarks ar links between four base elements.

Topologycal model that trys to explain the presence of dark matter in the universe

- If our universe is unorientable, like, e.g., sheet of Moebius, or Klein bottle, but with higher dimensions, 3, 4, or, who knows, even higher, then we could explain the dark matter with what localises on «other side» of the universe, that for physical apparata were undetectable, but there presence were fixed by density measurements in galaxies, etc, what, according our predictions, happened in the case of dark matter.
- In SU (2) symmetry abiding electron is represented in physical detectability (SO (3)) as a spin ½ particle, but "one copy» in two ways, in our galactic neighborhood and «the other side of the universe."
- If we attribute this to the whole matter, then one half of matter detects «here» and the other half ("on the other side of the unorientable space") of the universe furthest part, which no apparatus which focuses on the matter detection «here» detects. We are doing the same in the traditional physics, when we explain all from the readings from the apparata "here" without seeing the «most distant" part.



If our universe is unoriented then electron has two representations on both sides. We have two matters, neighbour world matter and "infinity far other Moebius side" matter which our physical world instruments can't detect but we fix it by density calculations, and that may stand for the dark matter in our universe.

What we have used? Predictions!

- Let us cite Krešimir Kumericki
  - http://arxiv.org/pdf/1602.04182.pdf
- «However, predictions of quantum field theory pertaining to the elementary particle interactions can often be calculated using a relatively simple “recipe” — Feynman diagrams»
- This type of prediction technique invented by Feynman is endeed technical, but we as if generalize it.
  - In case of particles we put «on the table» all what we know and «connect» this with Feynman diagram in case we succed.
  - In our general case we try to do the same: we «put on the table» the peaces of known facts and say, they should contribute to the new science. Similarly as in case of Feynman diagram, if we get «diagram» then this we may anounce as success, as a solution in the frames of the given technique.

Have we violated quantum prediction principle?

- Except the last with unoriented universe all steps are simply statement of what we already know and have.
- We are saying that that we already have here must be somewhat connected or something in connection, with only difference of deepness of what or how we predict these connections.
  - Actually we are presenting something in disguise of prediction. We take simple steps, sufficiently many aspects from physics, and united in a «prediction». Does there exist successful «Feynam diagram»? We appeal to non-existing topology that should be invented, but already what we have give sense of possibly something behind all this.

- References:
  - [1] http://dspace.lu.lv/dspace/handle/7/31740 , the slide 6 is taken from there.