

Water bridge experiment in TGD framework

Stable **water bridge** (<http://tinyurl.com/wao3fn3>) is formed between beakers of purified water and having voltage 15-25 kV. Beakers have opposite charges and charge separation occurs.

Water bridges as support for TGD view about dark matter and ZEO?

!Water bridges represent **prebiology without biochemistry** in water based on the notion of **MB carrying dark matter** as $h_{eff} = nh_0$ phases of ordinary particles (<http://tinyurl.com/rqhwajb>) and zero energy ontology (**ZEO**) (<http://tinyurl.com/wd7sszo>).

1. Large h_{eff} phases at MB induce long range quantum coherence and correlations at MB inducing ordinary non-quantum coherence at the level of ordinary matter as **forced coherence**.

Quite generally, **self-organization** (<http://tinyurl.com/y3xbkokb>) involves generation of long range correlations and requires energy feed. Self-organization could involve increase of h_{eff} at MB requiring energy feed - metabolic energy basically. Electric voltage would provide it now.

2. In ZEO (<http://tinyurl.com/wd7sszo>) generation of structures in self-organization as **dissipation in reverse time direction**. Quantum jumps in long scales at MB possible by large h_{eff} . In ZEO “big” (ordinary) state function reductions (BSFRs) involve time reversal at the level of MB. Dark matter would make it visible in everyday life in all scales!

A concrete model

!Stability of water bridge looks mysterious and requires coherence: analogy with gel.

1. **Pollack effect** (<http://tinyurl.com/gwasd8o>): **negatively charged exclusion zones** (EZs) are generated by energy feed, in particular irradiation. Part of protons becomes dark and are transferred to monopole flux tubes in the complement CEZ of EZ.

Sequences of dark protons as dark nuclei. In particular, sequences of 3 dark protons (analogs of tritium and ${}^3\text{He}$) at closed flux tubes would define dark DNA (DDNA) codons. They would be attached to a long flux tube by U-shaped appendices: **dark gene** as dark nucleus. Dark analogs of DNA, RNA, tRNA, aminoacids. Vertebrate genetic code realized at the level of dark matter.

2. **EZ property**: exclusion of impurities as disappearance of concentration gradients (dissipation) in opposite time direction! The **change of the arrow of time** in “big” (ordinary but macroscopic) state function reduction (BSFR) occurring at MB would **effectively** reverse the arrow of time for dynamics also at the level of BB (<http://tinyurl.com/wd7sszo>).
3. CEZ:s and EZs move in opposite directions in the electric field. Electric force must win the gravitational force. requiring overcritical voltage. A model for EZ predicts that

its mass is of **order Plack mass** and size is given by the **radius of large neuron**. The object could be called **Planckeon**. Electric field would also provide the energy needed for the formation of EZs - the value of h_{eff} must be increased from h to get dark protons.