



# EEG and the structure of magnetosphere

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## Abstract

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### 0.1 Magnetosphere as self-organizing system

The view that MS is a self-organizing systems is supported by the observations accumulated about the magnetic self-organization of the solar system during last decades reviewed in [?]. According to this report we are living a period of transition basically due to a penetration of highly charged material from the interstellar space into the interplanetary space from an interstellar plasma structure containing various kinds of magnetic structures.

This energy feed is inducing various kinds of processes affecting not only the atmo-, iono-, and MSs of Earth but also solar and other planetary MSs. Also interplanetary transmitting properties are affected. The Schumacher-Levy comet, which for few years ago collided with Jupiter and among other things a induced plasmoid train and had dramatic effects on Jupiter's MS, is referred to as a "Comet" SL-9 in [?]. I am not sure whether "Comet" was meant to suggest that SL-9 was actually a plasma magnetic structure from the interstellar space. There is also evidence that we are moving to a similar temperature instability that occurred for 10.000 years ago and which might have initiated the development of the bicameral society in turn leading to the modern society much later.

This process could be also seen as a re-self-organization and evolution of consciousness in solar length scale as a reaction to the encounter of heliospheric and interstellar magnetic intelligences. The penetration of interstellar plasmoid like structures to the interplanetary space through the solar magneto-pause could be interpreted as a failure of the magneto-immune system of the helioMS. The interaction of the planetary MSs with these intelligent (benevolent?) plasmoid like structures would in turn induce the re-self-organization. Needless to say, the interaction of the two intelligences might have far-reaching consequences for the evolution of the ordinary life.

## 0.2 Connection with the Comorosan effect

Comorosan effect means that the irradiation of living manner by visible light over a period which is a multiple of  $\tau_C = 5$  seconds implies enhanced catalytic activity [?, ?]. According to private communication, this effect is not restricted to living or even organic matter. TGD explains the effect [?] but the deeper explanation of the time scale of  $\tau_C = 5$  seconds has remained a longstanding challenge.

The 5 second time scale associated with Comorosan effect is the spin flip time scale associated with proton's  $\Delta n = 1$  cyclotron transition in the field of  $B_{end} = 13.32$  nT (which could correspond to the value of  $B_E = 5B_{end}/2 = 33.3$  nT in magnetic lobes).  $\tau_C$  is also associated with proton's  $\Delta n = 3$  cyclotron transition and the electronic cyclotron spin flip in the field of  $B_{end} = 2/5 B_E = 11.2$  nT (plasma sheet).

Lungs contain magnetic particles giving rise to  $\sim 10$  nT magnetic field and thus for  $B_{end} = 2B_E/5$  to  $n = 3$  protonic cyclotron transitions and electronic cyclotron spin flips in 5.5 second scale, which is very near to  $\tau_C$ . Perhaps Comorosan effect is used by the outer MS to affect the behavior of living matter and lungs are involved with this process.

## 0.3 Plasma sheet as a "microchip"

Plasma sheet should be a seat for magnetospheric sensory representations in theta and delta bands and among other things provide a model of magnetospheric self. If plasma sheet has this kind of role, it should manifest itself in its properties. Plasma sheet should be self-organizing, complex structure rather than system near thermal equilibrium. Plasma sheet is also expected to perform bio-control.

There is a fascinating finding about the "memory chip" character of the organization of the ionic velocity distribution in the plasma sheet [?]. The belief was that the distribution is a Maxwellian thermal distribution but an complex organization of the number of ions as a function of speed and direction relative to the direction of the local magnetic field has been detected [?]. By coloring the bins representing small volumes of the velocity space, one finds that 3-dimensional features like "eyes" and "wings" appear! The proposed interpretation is that these features codes the history of ionic currents. One cannot exclude the possibility that these ionic currents could reflect even our sensory experiences. The prediction is that also other transition regions (in particular magnetopause) should exhibit similar complex self-organization patterns. The simplest possibility is that the velocity patterns of ordinary electrons reflect the underlying pattern of dark matter at the dark magnetic flux tubes forming perhaps some kind of sensory representations.