

AGPhil 3: Poster Session

Time: Tuesday 18:00–18:10

Location: A 060

AGPhil 3.1 Tue 18:00 A 060

The Spacetime System of Reference and Measurement of Galilean-Newtonian Mechanics — ●ED DELLIAN — Bogenst. 5, D-14169 Berlin

The law of motion of classical continuum mechanics "force equals mass-acceleration" doesn't refer to a reference system. Galileo's theory is different. In his Discorsi of 1638, Third Day, Galileo's geometrical law of uniform motion is described in relation to two invariant scaled standards, the discrete elements of which are proportional to each other. The first is a standard of "time", the second of "space". The law of motion is a quaternate proportion of measured discrete quantities of space and time implying the elements Δs and Δt of the proportional standards "space" and "time". The constant parameter " Δs over Δt " reveals a quantized structure of the spacetime system of reference and measurement. The same system forms the basis of Newton's authentic theory of motion in discrete real space and real time, the parameter "element of space over element of time" being the proportionality constant required by Newton's second law "The change in motion is proportional (not equal!) to the motive force impressed". Newton's law accordingly reads " ΔF over $\Delta p = \Delta s$ over $\Delta t = \text{constant} = c$ ", or, " $\Delta F = \Delta p$ times c ". Science would look different had this quantized law of motion in real space and time been known when Einstein developed relativity by erroneously presupposing as Newton's law the continuous $f=ma$ formula of analytical mechanics, which was first conceived in 1750 by Leonhard Euler in Berlin as the basic law of his non-Newtonian "Berlin continuum mechanics".

AGPhil 3.2 Tue 18:00 A 060

Gravity as a resonance of the superstructure of a Field — ●LYUBOV NECHAJ — Donetsk physical-technical Institute of the NAS of Ukraine named after A.A. Galkin, Rosa Luxemburg street 72, 83114, Donetsk, Ukraine

The signal of the Field is related to the energy, mass and other physical quantities. Perturbation in Field is distributed and transmitted randomly. The Huygens principle allows assuming, that the reflection of the perturbation on the infinite sets of elements of symmetry forms the

superstructure of the perturbation, which reliably transmits the signal of the Field. Wave, which transmits a Signal and its shape, appears as a higher level of matter. Perturbation - Central fused Field signal has an outer structure in the form of objects that have a lifetime and a variable sets.

The structure of the signal becomes the basis of the causality of events among objects that are signals themselves. Nature has created a technology - time, which allows controlling the flow of signals and makes chaos deterministic system with a universal topological dynamics. In the chaos appear the most probable superstructures, as a reflection of unified communication. The objects back cause changes and disturbances in the Field.

The relationship of objects is the resonance, phenomenon of identification of superstructure of the Field with its perturbation. In this sense, the Gravitational field (and other known fields and interactions), exists as a resonance with the objects Field superstructure.

AGPhil 3.3 Tue 18:00 A 060

The Concept of Cognitive Space — ●OLENA DOBROVOLSKA — Kharkiv National University of Radioelectronics, Kharkiv, Ukraine

Cognitive space, as the concept of cognitive science, is in the point of intersection of different fields of research: philosophy, linguistics, psychology, anthropology. Despite light discrepancy of its definitions given by different researchers it has one constant base: it is "space" - the traditional subject of philosophical research. Either it is "the set of concepts and relations among them held by a human" (Newby) or "an association of any number of actors bound by a certain shared cognitive element" (Peverelli), it has to have some dimensions, bounds, it has to do with ontology (because it contains some concepts or elements that exist or don't exist) and it has to evolve, to be measured and to be presented. The questions are: Which theory of space can be applicable to cognitive space? Is it absolute or relative? What kind of existence can be applicable to it: is it real, virtual or mental space? Since it is human-dependent, how can different cognitive spaces exist, co-exist, intersect each other? How can it be conceptualised, presented and expanded on human-machine interaction?