

An Intensive Miniworkshop on  
**Going Beyond Metric: Black Holes, Non-Locality and Cognition**  
3–7 October 2010 / Tatranská Lomnica / Slovak Republic

The workshop will deal with various novel conceptual models/scenarios pertaining to the inner working of our universe. Participation in the event is by invitation only. Confirmed speakers include Rudolph E. Schild (Harvard University), Darryl J. Leiter (Charlottesville (VA),) Paul Bernstein (Boston), Deborah Kala Perkins (Stanford), Petr Pracna (Prague) and Luboš Neslušan (T. Lomnica).

### Preliminary Programme

#### Sunday, October 3

10:00 – 12:00: Paul Bernstein, Humans Experiencing Non-locality?

Numerous laboratory experiments seem to demonstrate a human capacity to perceive physical objects and events occurring thousands of miles from the individual perceiver, and sometimes even occurring in the future. Also, spontaneous personal experiences, some of whose crucial details have later been physically verified, have included perception of events at great distances from the individuals physical body (even when in coma). Among hypotheses which have been offered to explain the accuracy of such perceptions are quantum non-locality, magnetic monopole currents, and gauge-symmetry shifts within electro-magnetic fields generated by the human neural system. This presentation will summarize the experimental and experiential data, and then will critically examine the various hypotheses.

14:15 – 16:45: Round-table on “Non-locality”

#### Monday, October 4

10:00 – 12:00: Rudolph E. Schild, How the Quantum Hologram Formulation in a Dyadic Universe Manifests the Modern Miracles

How would you create a universe out of nothing? You would make all attributes have their opposite attributes (for there to be up there must be down) and for there to be space there would be reciprocal space. To address such a conceptual challenge, one needs to find a proper mathematical formulation of the mathematics of reciprocal space that enables the quantum holograms underlying consciousness and telepathy.

This formulation looks much like the reciprocal space (“r-space”) of the William Tiller formulation, and I am seeking the formulation of the Einstein field equations in this reciprocal space. There would also be a reciprocal space representation of the Maxwell equations, with magnetic fields dominating.

Such a dyadic representation would answer a perplexing question; what is the attribute of mass that causes it to curve space-time? And what is the Cremona transformation between the two spaces? Because the conscious human being has a presence in both the Einstein 4-D space and through consciousness contributes to the dark energy field, humans are the quanta of the dark energy (zero point vacuum field).

14:15 – 16:45: Round-table on “Black Holes and Quantum Hologram”

## Tuesday, October 5

10:00 – 12:00: Kala Perkins, tba

14:15 – 16:45: Round-table

## Wednesday, October 6

10:00 – 12:00: Luboš Neslušan, The unification of the fundamental interaction within Maxwell electromagnetism: Model of hydrogen atom, gravity as the secondary electric force, calculation of the unified inertia force

Considering two static, electrically charged, elementary particles, we demonstrate a possible way of proving that all known fundamental forces in the nature are the manifestations of the single, unique interaction. If there is only the single interaction, also the energy-impulse tensor in the general relativity must be the same for both gravitational and electromagnetic forces. Consequently, we suggest to replace the concept of potential (intensity of field) with the energy (acting force) and re-define the calibration of integration constants in the Schwarzschild solution of Einstein field equations. With these new constants, we sketch how the unique interaction can be described with the help of an appropriate solution of the well-known, common, classical Maxwell equations. According the solution, there are two zones, in the system of two oppositely charged particles, where the electric force is oscillating. The first particle can be in a stable, constant distance from the second particle, between the neighbouring regions of repulsion and attraction. In an outer oscillation zone, the corresponding energy levels in the proton-electron systems are identical (on the level of accuracy of values calculated by the Dirac's equations) to some experimentally determined levels in the hydrogen atom. (The full set of energy levels can likely be obtained after the generalization of the universal metric towards the Kerr solution of Einstein field equations.) Another, inner oscillation zone will probably explain the quantization of atom nucleus, since its size is the same as the size of the nucleus. In addition, the magnitude of the corresponding potential energy rises several orders above the Coulombian behaviour in accord with the "strongness" of the strong force. For each system of two particles, there is also the zone with the macroscopic, i.e. monotonous behaviour of the force. As well, the solution can be used to demonstrate that the net force between two assemblies consisting each (or at least one) of the same numbers of both positively and negatively charged particles is never zero. On contrary, a secondary electric force, having the same orientation as the force between the oppositely charged particles, is always present. It can be identified to the gravity. Finally, the solution of the Maxwell equations can be used to calculate the inertia force of a particle. The term corresponding to the first-term electric inertia force is zero, therefore this force is not proportional to the first-term electric charge.

14:15 – 16:45: Round-table on "Beyond Metric"

## Thursday, October 7

10:00 – 12:00: Petr Pracna, tba

14:15 – 16:45: Round-table on "Hierarchy of Complex Systems"