

The TETRAD PHYSIS Seminars

A unified four-part series of theoretical physics workshops taking place in 2015

The TETRAD PHYSIS Seminars: Reassessment and Refinement of Quantum and Continuum Models of Invariance in Fundamental Physics

Four compact concentrated workshops with online participation and presentation, focusing upon:

Foundations and Bases (roots, assumptions, prejudices, presumptions, expectations, as well as the tools and methods as they have evolved over particularly the past century)

for and within

General Relativity, Quantum Relativity, Quantum Gravity, Quantum Topology and related foundations, both theoretical as well as experimental, which constitute research investigations to integrate and extend beyond “Quantum” and “Relativity” and particularly with respect to:

- Spacetime (“from ontology to topology”) – non-continuous, fractal, solitonic geometries
- “Use, meaning and representation” issues of fundamental properties of matter
- Quantum Flux and Vacuum, and issues of effectiveness of classical and uniform models
- The Standard Model Itself and open questions associated with so-called “missing” particles
- Fundamental Attributes and Relations associated with Matter, Dark Matter, Dark Energy
- Macroscopic and Cosmological Implications (including implications for other sciences and engineering: biology, computation, futuristic space-based energy generation and propulsion)

These seminars are planned for small groups meeting in “roundtable” and informal formats, with presentations but primarily discussions as the norm, as seminars in the classic sense. The importance of “face to face” and bringing together diverse “roots and leaves” is considered to be of great value. In order to accommodate a diversity, breadth and scope of participation and knowledge exchange within the global scientific community, primarily among but not limited to particular segments of theoretical physics and mathematics, there will be a real-time, on-line programme; this is currently being implemented in order to enable many scientists to not only “attend” but to have opportunities for Q/A and “mini-forum” discussions. This dimension of the Seminar Series is also being extended to provide unique educational and “online lab” project opportunities for students at all levels.

The meetings will take place in suitable facilities and accommodations for onsite meetings of 12 to 18 participants, and in close proximity with multiple noteworthy institutions. All teleconferencing technology including equipment has been arranged and will be provided by the conference organizing team. Each seminar is designed to provide for an atmosphere conducive to creative dialog and a very comfortable, relaxed and culturally inspiring setting.

Dates and Locations (prospective; including start/end partial days (main session is +1 and -1 period):

I. Primus Spring 2015 United States New York City	II. Secundus Summer 2015 Scotland Edinburgh	III. Tertius Fall 2015 Switzerland Bern	IV. Quartus Late Fall 2015 Israel Jerusalem
28.March-5.April (8)	27.June-5.July (8)	26.September-4.October (8)	21-29.November (8)

On the next page are additional remarks regarding suggested thematic questions and issues. The TETRAD PHYSIS Seminar Series is one of the four Seminar Series sets managed by the Institute for Innovative Studies.

Organizing and Planning Document (final draft: 1.August.14 version)

I. Primus - Spring 2015

Focus: space and particles, the "chicken and egg" problem; what are the unanswered and especially the unasked, often-ignored, or no-longer-asked questions and More. How fundamental attributes and properties and the Standard Model have come to be, what are reasonable views for change, what and why are our assumptions.

II. Secundus - Summer 2015

Focus: presumptions, prejudices and presentiments influencing and governing the fundamental concepts and frameworks in the orientation of QM, GR and integrative/unified theories to experience and experiment; process models; alternatives to particle/subparticle models; meaning of "flux" and "uncertainty;" alternative spacetimes and possible more appropriate mathematics. Open examination of alternative maths and input from other domains.

III. Tertius - Fall 2015

Focus: Mathematical tools and methods for thinking and representing Wholes that influence causally and existentially their "parts" - what we perceive and measure as "things"; non-commutative geometries, projective geometries, "tensors-plus", twistors, knots, tiles-in-3D and 4D, tensegrities, new topologies, and spaces in which there are behaviors that are comparable in meaning to what a soliton is as a wave or a tensegriton as a structure.

IV. Quartus – Late Fall 2015

Focus: Bringing it all together into a new QR. Understanding SR and GR and the "relativity" in those relationships which involve the relative relations between entities as being precisely those which exhibit Invariance, including across scales (from ultra-micro (Planck) to ultra-macro (cosmological)). Aiming toward closure of gaps and distances between theoretical models, leading to a new synthesis with hopes for algebraic and geometrical unity simplifying expectations and hopes for experimental validation. Strong examination of Macroscopic implications.

Additional Notes:

Intentionally, The Seminar Series is planned to coincide with aspects of the centenary of General Relativity (the years leading up to and including 1915). However, this is not meant as "yet another" commemorative event.

It is hoped that most of the active participants will have an interest to attend all four of the seminars in person, but if that is not possible, the internet-based teleconferencing capabilities being set up will offer excellent prospects for participation "in absentia" – particularly for persons who have attended previous seminars or who know other participants well. The cross-cultural, cross-generational educational dimension of the Series cannot be overemphasized.

This Seminar Series is one of four such series. It is expected that some individuals participating in one series will have an interest in either direct or indirect participation in one of more of the other series. The primary organizer of the four Series is the Institute for Innovative Study (instinnovstudy.org), and the primary supporting sponsors are ECOADUNA Foundation (ecoaduna.org), TetraDyn Ltd. (tetradyn.com), KOIN Ltd. (koin.tdy.org) and FORTE Horizons LLC (www.fortehorizons.com).

Presently (July, 2014) the organizing committee is being finalized. It is expected that the process of defining individual participation and topic refinement, firm dates and locations, organization-involvement, and completion of the already-underway securing of funds, will become substantially finalized within the next three months. Persons with interest in becoming directly or indirectly involved in the organizing committee and in assisting with special tasks, as well as for participation, preparation, publications related to one or multiple seminars should make contact by email and then meetings can proceed via phone, Skype or teleconference. Key funding is already firmly in place.

Without question, particularly in these challenging socioeconomic times, all resources for science, especially for theoretical physics, and for an event of this complexity, require creativity, innovation, determination and persistence. The combination of confirmed private donation pledges, multiple prospective small grants, and a combination of inventive fund-raising plans made by the primary organizers, all together provides a present substantive base to enable making this announcement in confidence of a successful seminar series. The international coming-together-of-diverse-minds is also an extremely important theme. The challenges in theoretical physics, new mathematics, and trans-scalar science (e.g., bridging physics, biology and neuroscience) will not happen from solitary individuals or nations. This Seminar Series can be an important catalyst for new ideas and also new practices in our future world in which we all have an important stake.

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