

General Relativity, Quantum Mechanics and Everything in Between - Celebrating 92 Springs of Professor Lawrence Paul Horwitz extended till April 1

March 27, 2022

Dear Friends & Colleagues,

We are delighted to invite you to attend a conference in honor of the ninety second birthday of Professor Lawrence Paul Horwitz. The conference will be dedicated to Larry's research interests and to the topics in which he made important and lasting contributions:

I. Relativistic Quantum Mechanics

1. Covariant Hilbert space on space-time, parametrized universally by invariant parameter t .
2. Many body relativistic mechanics.
3. Bound states and scattering theory.
4. Spin and statistics, quantum field theory.
5. Associated gauge fields, radiation.
6. Relativistic entanglement.
7. Relativistic statistical mechanics.

II. Unstable Systems

1. Gamow and Wigner-Weisskopf models of decaying particles.
2. Rank one potential and Lee-Friedrichs model.
3. Semigroups and Lax-Phillips Theory.
4. Relativistically covariant Lax Phillips theory.
5. Hamiltonian instability and chaos.
6. Stochastic Schrödinger equation and wave function collapse.

1. Hypercomplex Hilbert Spaces and Quantum Theory

1. Octonion Hilbert space and Clifford algebras.
2. Quaternionic quantum mechanics, tensor products.
3. Quaternionic Lee-Friedrichs model.
4. Quaternionic statistical mechanics.
5. Emergent quantum theory (Adler), hypercomplex quantum field theory.

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IV. General Relativity

1. Quantum mechanics in general relativity.
2. Spin and entanglement in GR.
3. Retardation theory.
4. Lensing.
5. Geometrical phase and Bohm-Aharonov effect in gravitational field.

Organizing Committee: Prof. Jacob Levitan & Prof. Asher Yahalom Format: Hybrid (zoom and in person)

Dates: 25-26 April, 2022.

Venue: Ariel University, Ariel, Israel. Registration Fee: None.

Registration: By April 1, 2022, please fill your name in the . Participants who wish to speak at the conference should indicate the title of their talk in the same form. We shall notify you later when and how to submit an abstract.

Please do not hesitate to contact us by e-mail or phone if you have any questions. Looking forward to seeing you in Israel and celebrating Larry's birthday with us. Best Regards

The Organizing Committee

Newsletter Items: