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ICTS MONTHLY COLLOQUIUM

Weak Measurements: A peephole to the quantum world

Weak measurement (WM) is an alternative to von Neumann's dogma of the "collapse" of a wave function: it avoids the necessity of the latter's complete destruction, while capable of extracting partial information from the system measured. Concomitantly, measurement is associated with a back-action of the detector on the system's state. This back-action can be harnessed for the purpose of steering a quantum state into a pre-designated target state, and for quantum engineering of non-trivial states of matter. I will try to package it all, also elucidating the relation to driving protocols of open systems, and to active error correction platforms.

Yuval Gefen

The Weizmann Institute of Science, Israel

Professor Yuval Gefen is the Isabelle and Samuel Friedman Professorial Chair of Theoretical Physics at the Weizmann Institute of Science, Israel. Professor Gefen is a condensed matter physicist who was one of the founding fathers of Mesoscopic Physics, and has made pioneering contributions in the fields of topological phases and quantum measurements. After receiving his PhD from Tel Aviv University he was a postdoctoral fellow at the Institute for Theoretical Physics (UCSB) and at the University of Washington (working with David Thouless) before joining the Weizmann Institute. Professor Gefen is the recipient of many honors and fellowships including the Morris L. Levinson Award in Physics, the Alexander von Humboldt, the Helmholtz, and the Max Planck Awards for Physics. He Presently holds an InfoSys Chair at IIsc.

3:30 PM, 10 October 2023

Zoom link: https://bitshortly.com/5eEPv

Meeting ID: 811 1310 7371

Passcode: 069515

Madhava Lecture Hall, ICTS, Bengaluru