

Interacting Electrons and Quantum Magnetism

Monday, June 20: Butler Auditorium, Ne'eman Inst., Technion

9:00-9:30 Opening Words

Session 1: Quantum Matter 1

9:30-10:00	Steve Kivelson Stanford	What I know about the solution of the Hubbard model that will still be true at Assa's 80th birthday
10:00-10:30	Dan Arovas U.C. San Diego	Quantum nucleation of skyrmions in chiral magnets

10:30-11:00 Coffee Break

Session 2: Quantum Matter 2

11:00-11:30	Amit Keren Technion	The stiffnessometer; a magnetic-field free superconducting stiffness meter, and its application to the cuprates
11:30-12:00	Aharon Kapitulnik Stanford	The magnetic field tuned superconductor to insulator transition
12:00-12:30	Aviad Frydman Bar Ilan U.	Specific heat measurements through the superconductor-insulator quantum phase transition

12:30-14:00 Lunch Break

Session 3: Unconventional superconductivity

14:00-14:30	Amir Yacoby Harvard	A New Spin on Superconductivity
14:30-15:00	Amit Kanigel Technion	The electronic structure of $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_y$ in the presence of a super-current: Flux-flow, Doppler shift and quasiparticle pockets
15:00-15:30	Gad Koren Technion	Quantum vortex tunneling in YBCO thin films, and supercurrents in c-axis junctions of the cuprates under magnetic fields

15:30-16:00 Coffee Break

Session 4: Topological phases 1

16:00-16:30	Yuval Gefen Weizmann	A New Paradigmatic Picture of the Edge of Fractional Quantum Hall Systems
16:30-17:00	R Shankar Yale	Equality of certain bulk wave functions and edge correlations in $d=2$ and 3.
17:00-17:30	Eric Akkermans Technion	Measuring Chern numbers with waves in quasicrystals



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Tuesday, June 21: Butler Auditorium, Ne'eman Inst., Technion

Session 5: Quantum Magnetism 1

9:00-9:30	Ganapathy Murthy U. Kentucky	The Hubbard Model on Bilayer Graphene: A Second Look
9:30-10:00	Snir Gazit U.C. Berkeley	Confinement transition of Ising lattice gauge theory coupled to fermions.
10:00-10:30	Sylvian Capponi U. Toulouse	A brief history of Contractor Renormalization

10:30-11:00 Coffee Break

Session 6: Quantum Matter 3

11:00-11:30	Subir Sachdev Harvard	Quantum matter without quasiparticles: graphene, random fermion models, and charged black holes
11:30-12:00	Herb Fertig Indiana U.	Floquet's Theorem as a Route to Topology in Graphene
12:00-12:30	Yigal Meir Ben-Gurion U.	Spontaneous Time-Reversal Breaking and Edge Reconstruction in Quantum Hall and Topological Insulators

12:30-18:00 Conference trip to the old city of Caesarea

19:00 Conference Dinner



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Wednesday, June 22: Lecture Hall 323, Physics Department, Technion

Session 7: Quantum Matter 4

9:00-9:30	Mohit Randeria Ohio State U.	A simple fermion model for a direct transition from an insulator to a superconductor
9:30-10:00	Dror Orgad Hebrew U.	Enhanced pairing in inhomogeneous Hubbard models
10:00-10:30	James Analytis U.C. Berkeley	Anomalous scaling in the transport as a function of magnetic field and temperature in a high Tc superconductor

10:30-11:00 Coffee Break

Session 8: Quantum Magnetism 2

11:00-11:30	Thierry Giamarchi U. Geneve	Quantum Spins as quantum simulators
11:30-12:00	Patrick Azaria Jussieu	Bound-States Dynamics in One-Dimensional Multi-Species Fermionic Systems
12:00-12:30	Ophir Auslaender Technion	Local Characterization of Superconductivity in Iron Pnictides

12:30-14:00 Lunch Break

Session 9: Quantum Transport

14:00-14:30	Kathryn Levin U. Chicago	Commonalities of the pseudogap in high Tc superconductors and ultracold Fermi superfluids
14:30-15:00	Phil Allen SUNY Stony Brook	Electrical and Thermal Conductivity with Questionable Quasiparticles
15:00-15:30	Efrat Shimshoni Bar Ilan U.	Emergence of helical edge conduction in graphene at the $n = 0$ quantum Hall state

15:30-16:00 Coffee Break

16:00 – 18:00 Poster Session



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Thursday, June 23: Butler Auditorium, Ne'eman Inst., Technion

Session 10: Quantum Dynamics

9:00-9:30	Sebastian Huber ETH Zurich	Single Vortex Dynamics: old puzzles and new insights
9:30-10:00	Eugene Demler Harvard	Dynamical Copper pairing in non-equilibrium electron-phonon systems
10:00-10:30	Daniel Podolsky Technion	Excitations of a quantum solid

10:30-11:00 Coffee Break

Session 11: Quantum Dynamics 2

11:00-11:30	Matthew Fisher U.C. Santa Barbara	Quantum rotations and entanglement of symmetric molecules in solvent
11:30-12:00	Yuval Oreg Weizmann	From an array of quantum wires to three-dimensional fractional topological phases
12:00-12:30	Amnon Aharony Ben-Gurion U.	Spin-orbit effects on mesoscopic junctions

12:30-14:00 Lunch Break

Session 12: Quantum Matter 6

14:00-14:30	Dan Shahar Weizmann	Superconductor-insulator transition far from equilibrium
14:30-15:00	Assa Auerbach Technion	What does the Hall number measure?

15:00-15:30 Coffee Break

Session 13: Student session

15:30-15:50	Erez Berg Weizmann	Bad metals and more of Assa's good friends
15:50-16:10	Ilia Khait Technion	Spin transport of weakly disordered Heisenberg chain at infinite temperature
16:10-16:30	Ehud Altman Weizmann	Large N, large S, large mess: a solvable model for a dynamical transition to quantum chaos
16:30-16:50	Netanel Lindner Technion	Universal chiral steady states violating the first and second Auerbach rules



Interacting Electrons and Quantum Magnetism

Friday, June 24: Lecture Hall 323, Physics Department, Technion

Session 14: Quantum and Classical Matter

9:00-9:30	Uri Sivan Technion	The elusive Hydrophobic Interaction
9:30-10:00	Ady Stern Weizmann	Magneto-transport and disorder in Weyl semi-metals.

10:00-10:30 Coffee Break Break

Session 15: Fractional Quantum Hall effect

10:30-11:00	Bert Halperin Harvard	Perspectives on the half-filled Landau level
11:00-11:30	Joseph Avron Technion	Braiding magnetic fluxes in Pauli Hamiltonians
11:30-12:00	Duncan Haldane Princeton	Geometry of flux attachment to composite bosons and fermions in the FQHE

12:00-12:30 Concluding Remarks

