Emergent Phenomena in the Dynamics of Quantum Matter: Disorder, Quenches, Simulations and Experiments

Website: bnl.gov/quantmat2014/

Webcasting: http://videostreaming.gc.cuny.edu/videos/channel/4/

Monday-Thursday, April 14-17 (with follow up small group discussions/collaborations on Friday, April 18)

Location: The Graduate Center of CUNY, 365 5th Ave. **Rm. 4102**, NY, NY

Organizers: A. Feiguin, R. Konik, V. Oganesyan

	Monday	Tuesday	Wednesday	Thursday
9:00 AM	Han	Langen	Schlichting	Hill
9:30	Heidrich-Meisner	D'errico	Schlichting	Rigol
10	Khemani	Grisins	Lawrence	Freericks
10:30	coffee/discussion	coffee/discussion	coffee/discussion	coffee/discussion
11	Moore	Kirton	Davidson	Kjall
11:30	Johnson	Weitz	Lanzara	Huse
12:00	Johnson	Weitz	Lanzara	Subedi
12:30	lunch/discussion	lunch/discussion	lunch/discussion	lunch/discussion
2:30	Bonca	Green	Devereaux	Abanin
3:00	James	Hipolito	Devereaux	Mandt
3:30	coffee/discussion	coffee/discussion	coffee/discussion	coffee/discussion
4:30	Werner	Bhaseen	Magan	Caux
5:00	Pekker	Kormos	Tureci	discussion
5:30--	discussion	discussion	discussion	discussion

Public lecture: M. Weitz, "Quantum physics with atoms and light: from atomic clocks to Bose-Einstein condensate of light", 6:30PM, Tuesday 4/15/2014, rm. C201/202 (Concourse level)

Participants: A. Abanov (SUSB), A. Cortes (CUNY), A. James (UC London), A. Lanzara (UCB), A. Mitra (NYU), A. Nocera (NEU), A. Polkovnikov (BU), A. Scardicchio (ICTP), A. Tsvelik (BNL), Alaska Subedi (CPT, Paris), Albion Lawrence (Brandeis), A.G. Green, C. De Grandi, C. D'errico (Florence), D. Abanin (Perimeter), D. Huse (Princeton), D. Pekker (Pitt), D. Stokes (BNL), de Nardis (Amsterdam), F. Heidrich-Meisner (LMU, Munich), F. Pietrascapina (ICTP/NYC), Feiguin (NEU), Guy Cohen (Columbia), Haque (MPI-PKS), I. Kilch (Virginia), J. Bonca (Ljubljana), J. Freericks (Georgetown), J. Han (Buffalo), J. Hill (BNL), J. Kjall (MPIPKS), J. Moore (Berkeley), J. S. Caux (Amsterdam), J. Torres (Yeshiva), L. Ge (CSI, CUNY), L. Radzihovsky (Boulder), L. Santos (Yeshiva), Langren (Austria), M. J. Bhaseen (Kings College), M. Kormos (Budapest), M. Kulkarni (Princeton), M. Mulansky (Dresden), M. Rigol (Penn), M. Schiro' (Columbia), M. Serbyn (MIT), M. Weitz (Bonn), N. Andrei (Rutgers), N. Robinson (Oxford), P. Grisins (Vienna), P. Johnson (BNL), P. Kirton (St. Andrews), P. Orland (CUNY), P. Werner (Fribourg), R. Hippolito (Georgia Tech), R. Nandkishore (Princeton), R. van den Berg (Amsterdam), R.Wortis (Simon Fraser), S. Mandt (Princeton), S. Schlichting (BNL), S. Sondhi (Princeton), T. Devereaux (SLAC), V. Khemani (Princeton), V. Ros (ICTP), Wouters (Amsterdam), Y. Wan (JHU), S. Davidson (BU), J. M. Magan (), Lanzara, Tureci

Day	Speaker	Talk title
Th	Abanin	Entanglement, ergodicity, and many-body localization
W	Bhaseen	Universal Thermal Transport at Quantum Critical Points
M	Bonca	Unusual Two-stage Dynamics of the Spin-Lattice Polaron Formation
Th	Caux	Exact solutions for quenches in 1d Bose gases and quantum spin chains
T	D'errico	Observation of a disordered insulator from weak to strong interactions
T	Deveraux	Understanding non-equilibrium behavior of driven model systems
Th	Freericks	Understanding thermalization after a dc field quench in the time domain
T	Green	Quantum and Classical in Adiabatic Computation
T	Grisins	Quantum Lathe: Tunnel cooling of 1D Bose-Einstein quasicondensate
M	Han	Multi-current solutions in dissipative nonequiibrium near quantum critical point
M	Heidrich-Meisner	Non-equilibrium dynamics of interacting bosons in interaction quantum quenches and sudden expansions
Th	Hill	Ultrafast lattice excitation of striped cuprates
T	Hipolito	Martin-Siggia-Rose approach to quantum error correction in the presence of time-dependent noise
Th	Huse	Many-body localization lengths and possibilities for scaling near the mobility edge
M	James	Quantum quenches in 2D via arrays of coupled chains
M	Johnson	Ultrafast photo-induced changes in the electronic structure of the cuprate superconductors
M	Khemani	Symmetry and Localization Protected Quantum Order
T	Kirton	*A non-equilibrium model of photon condensation*
Th	Kjall	Entanglement near Many-Body Localization transitions
Th	Kormos	Interaction quenches in the 1D Bose gas
T	Langen	Non-Equilibrium Dynamics of One-Dimensional Bose Gases
W	Lanzara	Non-equilibrium momentum dependent dynamic of high temperature superconductors
W	Lawrence	Coarse grained quantum dynamics
W	Magan	Fast scramblers: from black holes to quantum information
Th	Mandt	Relaxation towards negative absolute temperature states
M	Moore	Quenches in localized or topological systems: examples of generalized hydrodynamics in 1D
M	Pekker	Representing highly excited eigenstates of many-body localized systems using matrix product states
W	Davidson	SU(3) classical representation of quantum dynamics of interacting spins
W	Rigol	Fluctuation-dissipation relations in isolated quantum systems after a quench
W	Schlichting	Thermalization process in high energy heavy-ion collisions
Th	Subedi	Theory of nonlinear phononics for coherent light-control of solids
Th	Tureci	Engineering photon-mediated interactions via Cavity Quantum Electrodynamics: from blackbody radiation to steady-state entanglement
T	Weitz	Crossover between a laser-like state and a photon Bose-Einstein condensate
M	Werner	Field-induced polarons