2014 Boulder Summer School

Modern Aspects of Superconductivity

June 30-July 25, 2014

Detailed schedule
All Lectures are in **Duane Physics Room G125**
Public Lectures are in **Duane Physics Room G1B20**

Sunday, June 29th

6:30pm – 8:30pm Registration mixer with refreshments
WeatherTech Café in the C4C

Week 1, June 30 - July 3

Monday, June 30th

8:30 – 9:00	**Leo Radzihovsky**
	Welcome and Introduction
9:00 – 10:30	**Randeria**
	Phenomenology of HTSC in cuprates
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Sigrist**
	Symmetry aspects of unconventional superconductivity I
14:30 – 16:00	**Dessau**
	Fundamentals and Applications of ARPES on correlated and superconducting electron systems
16:15 – 17:15	**Student introductions**

Tuesday, July 1st

9:00 – 10:30	**Sigrist**
	Symmetry aspects of unconventional superconductivity II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Randeria**
	Quantum Oscillations, X-ray experiments
14:30 – 16:00	**Dessau**
	ARPES studies of high-T_c superconductors

19:00 – 20:00	**Soundbites I**

Wednesday, July 2nd

9:00 – 10:30	**Randeria** *ARPES, STM experiments*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Martinis** *Quantum computing and error correction*
14:30 – 16:00	**Sigrist** *Symmetry aspects of unconventional superconductors III*
19:00 – 21:30	**Poster Session I** **11th Floor Gamow Tower**

Thursday, July 3rd

9:00 – 10:30	**Sigrist** *Symmetry aspects of unconventional superconductors IV*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Martinis** *Superconducting qubits*
14:30 – 16:00	**Randeria** *Review of BCS-BEC Crossover & Unitary Fermi gas as an example of strongly interacting paired superfluid*
16:30 - 18:00	**Q and A Session**
18:00 - 19:00	**BBQ (Dirks East Courtyard, C4C)**

Friday, July 4th

Holiday

Week 2, July 7 - 11

Monday, July 7th

9:00 – 10:30	**Kivelson** *Modern aspects of superconductivity I*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Keimer**

	Neutron and X-ray scattering studies of superconductors I
14:30 – 16:00	**Senthil**
	Superconductivity near the Mott transition I

Tuesday, July 8th

9:00 – 10:30	**Keimer**
	Neutron and X-ray scattering studies of superconductors II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Kivelson**
	Modern aspects of superconductivity II
14:30 – 16:00	**Senthil**
	Superconductivity near the Mott transition II
17:00 – 20:00	**Flagstaff Picnic**

Wednesday, July 9th

9:00 – 10:30	**Boebinger**
	Evidence for a phase transition near optimum doping in the cuprates (1995 to present).
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Keimer**
	Neutron and X-ray scattering studies of superconductors III
14:30 – 16:00	**Vafek**
	d-wave quasiparticles in the vortex state
19:00 – 21:30	**Public Lecture**

Thursday, July 10th

9:00 – 10:30	**Paramekanti**
	Strong coupling aspects of superconductivity I
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Boebinger**
	Specific heat studies of the cuprates.
14:30 – 16:00	**Kivelson**
	Modern aspects of superconductivity III
16:30 - 18:30	**Q and A Session**

Friday, July 11th

9:00 – 10:30	**Vafek**
	Quasiparticle thermal Hall transport in d-wave superconductors
10:30 – 11:00	Coffee Break

11:00 – 12:30	**Kivelson**
	Modern aspects of superconductivity IV
14:30 – 16:00	**Paramekanti**
	Strong coupling aspects of superconductivity II
18:00 – 19:00	**BBQ (Dirks East Courtyard, C4C)**

Week 3, July 14 - 18

Monday, July 14th

9:00 – 10:30	**Sachdev**
	Magnetism and superconductivity I
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Millis**
	Theory of Superconductivity I
14:00 – 15:30	**Sachdev**
	Magnetism and superconductivity II
15:45 - 17:15	**Coleman**
	The physics of heavy-fermion superconductors I

Tuesday, July 15th

9:00 – 10:30	**Sachdev**
	Magnetism and superconductivity III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Sachdev**
	Magnetism and superconductivity IV
14:00 – 15:30	**Coleman**
	The physics of heavy-fermion superconductors II
15:45 – 17:15	**Millis**
	Theory of superconductivity II
19:00 - 20:00	**Soundbites II**

Wednesday, July 16th

9:00 – 10:30	**Millis**
	Theory of superconductivity III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Matsuda**

	Iron-based superconductors I
14:00 – 15:30	**Coleman**
	The physics of heavy-fermion superconductors III
19:00 – 21:30	**Poster Session III**
	11th Floor Gamow Tower

Thursday, July 17th

9:00 – 10:30	**Coleman**
	The physics of heavy-fermion superconductors IV
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Millis**
	Theory of Superconductivity IV
14:00 – 15:30	**Matsuda**
	Iron-based superconductors II
16:30 - 18:30	**Q and A session**

Friday, July 18th

9:00 – 10:30	**Matsuda**
	Iron-based superconductors III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Dessau**
	Recent developments
18:00 – 19:00	**BBQ (Dirks East Courtyard, C4C)**

Week 4, July 21 – 25

Monday, July 21st

9:00 – 10:30	**Radzihovsky**
	S-wave Feshbach resonant superfluidity
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Orenstein**
	Optical Properties of superconductors I
14:30 – 16:00	**Vafek**
	d-wave and other unconventional superconductivity III
19:00 - 20:30	**Seminar**

Tuesday, July 22nd

9:00 – 10:30	**Orenstein**
	Optical Properties of superconductors II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Hoffman**
	STM studies of modern superconductors I
14:30 – 16:00	**Radzihovsky**
	P-wave Feshbach resonant superfluidity
19:00 - 20:00	**Soundbites III**

Wednesday, July 23rd

9:00 – 10:30	**Hoffman**
	STM studies of modern superconductors II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Fu**
	Topological superconductivity I
14:30 – 16:00	**Chubukov**
	Superconductivity due to repulsive interactions I
19:00 - 21:30	**Poster session III**
	11th Floor Gamow Tower

Thursday, July 24th

9:00 – 10:30	**Fu**
	Topological superconductivity II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Chubukov**
	Superconductivity due to repulsive interactions II
14:30 – 16:00	**Orenstein**
	Optical Properties of superconductors III
18:00 – 19:00	**BBQ (Dirks East Courtyard, C4C)**

Friday, July 25th

9:00 – 10:30	**Chubukov**
	Superconductivity due to repulsive interactions III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**Q and A session**