2016 Boulder Summer School

Topological Phases of Quantum Matter

July 11 – August 5, 2016

Detailed Schedule

All lectures are in **Duane Physics Room G130**
Public lectures in **Duane Physics Room G1B30**

Week 1, July 11-15

Sunday, July 10th

6:30pm – 8:30	**Registration mixer with refreshments** WeatherTech Café in the C4C *Beer and Wine Will Be Served*

Monday, July 11th

8:30 – 9:00	**Leo Radzihovsky** *Welcome and Introduction*
9:00 – 10:30	**N. Read** *Quantum Hall Effect I*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**C. Nayak** *Effective Field Theories of Topological Phases & Quantum Computation I*
12:30 – 13:45	Lunch
14:00 – 15:30	**C. Kane** *Topological insulators I*
15:30 – 16:30	**Participants' introduction**

Tuesday, July 12th

9:00 – 10:30	**N. Read** *Quantum Hall Effect II*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**C. Nayak** *Effective Field Theories of Topological Phases & Quantum Computation II*
12:30 – 13:45	Lunch

14:00 – 15:30	**C. Kane** *Topological insulators II*

Wednesday, July 13th

9:00 – 10:30	**N. Read** *Quantum Hall Effect III*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**P. Jarillo-Herrero** *Quantum Hall in graphene & beyond I*
12:30 – 13:45	Lunch
14:00 – 15:30	**C. Kane** *Topological insulators III*
15:45 – 17:15	**A. Turner** *Entanglement* I

Thursday, July 14th

9:00 – 10:30	**N. Read** *Quantum Hall Effect IV*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**C. Nayak** *Effective Field Theories of Topological Phases & Quantum Computation III*
12:30 – 13:45	Lunch
14:00 – 15:30	**P. Jarillo-Herrero** *Quantum Hall in graphene & beyond II*
18:30 – 19:15	**Poster Talks I** *Duane G130*
19:15 – 22:00	**Poster Session I** *11th Floor Commons Room*

Friday, July 15th

9:00 – 10:30	**C. Kane** *Topological insulators IV*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**C. Nayak** *Effective Field Theories of Topological Phases & Quantum Computation IV*
12:30 – 13:45	Lunch
14:00 – 15:30	**A. Turner** *Entanglement II*
19:00 – 21:30	**Catered dinner**

11th Floor Commons Room

Week 2, July 18-22

Monday, July 18th

9:00 – 10:30	**A. Ludwig**
	Classification of topological insulators I
10:30 – 11:00	Coffee Break
11:00 – 12:30	**A. Vishwanath**
	Weyl semimetals & SPT phases I
12:30 – 13:45	Lunch
14:00 – 15:30	**F. von Oppen**
	Majoranas I

Tuesday, July 19th

9:00 – 10:30	**A. Ludwig**
	Classification of topological insulators II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**A. Vishwanath**
	Weyl semimetals & SPT phases II
12:30 – 13:45	Lunch
14:00 – 15:30	**F. von Oppen**
	Majoranas II

Wednesday, July 20th

9:00 – 10:30	**A. Ludwig**
	Classification of topological insulators III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**A. Vishwanath**
	Weyl semimetals & SPT phases III
12:30 – 13:45	Lunch
14:00 – 15:30	**F. von Oppen**
	Majoranas III

Thursday, July 21th

9:00 – 10:30	**E.-A. Kim**
	Topological superconductors I
10:30 – 11:00	Coffee Break
11:00 – 12:30	**A. Vishwanath**
	Weyl semimetals & SPT phases IV
12:30 – 13:45	Lunch
14:00 – 15:30	**N. P. Ong**
	Dirac and Weyl semimetals I
18:30 – 19:15	**Poster Talks II**
	Duane *G130*
19:15 – 22:00	**Poster Session II**
	11th Floor Commons Room

Friday, July 22nd

9:00 – 10:30	**N. P. Ong**
	Dirac and Weyl semimetals II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**E.-A. Kim**
	Topological superconductors II
12:30 – 13:45	Lunch
14:00 – 15:30	**R. Melko**
	Monte Carlo Strategies for Spin Liquids I

Week 3, July 25-29

Monday, July 25th

9:00 – 10:30	**L. Balents**
	Spin liquids I
10:30 – 11:00	Coffee Break
11:00 – 12:30	**R. Melko**
	Monte Carlo Strategies for Spin Liquids II
12:30 – 13:45	Lunch
14:00 – 15:30	**S. Frolov**
	Majoranas in nanowires I

Tuesday, July 26th

9:00 – 10:30	**L. Balents**
	Spin liquids II
10:30 – 11:00	Coffee Break
11:00 – 12:30	**S. White**
	Tensor Network Methods for Spin Liquids, I
12:30 – 13:45	Lunch
14:00 – 15:30	**S. Frolov**
	Majoranas in nanowires II
19:00 – 20:00	Public lecture - **L. Balents,** Duane Physics G1B30
	Strange Stuff: A Second Quantum Revolution

Wednesday, July 27th

9:00 – 10:30	**L. Balents**
	Spin liquids III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**S. White**
	Tensor Network Methods for Spin Liquids, II
12:30 – 13:45	Lunch
14:00 – 15:30	**A. Yazdani**

Visualizing topological boundary modes: From Dirac and Weyl to Majorana fermions I

Thursday, July 28th

9:00 – 10:30	**A. Yazdani** *Visualizing topological boundary modes: From Dirac and Weyl to Majorana fermions II*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**K. Kanoda** *Spin liquids in organic materials I*
12:30 – 13:45	Lunch
14:00 – 15:30	**X. Chen** *SPT & SET phases I*
18:30 – 19:15	**Poster Talks III** Duane *G130*
19:15 – 22:00	**Poster Session III** *11th Floor Commons Room*

Friday, July 29th

9:00 – 10:30	**X. Chen** *SPT & SET phases II*
10:30 – 11:00	Coffee Break
11:00 – 12:30	**K. Kanoda** *Spin liquids in organic materials II*
12:30 – 13:45	Lunch
14:00 – 15:30	**D. Sheng** *Topological state numerics*
19:00 – 21:30	**Catered dinner** *11th Floor Commons Room*

Week 4, August 1-5

Monday, August 1th

9:00 – 10:30	**L. Fu**
	Topological insulators - applications I
10:30 – 11:00	Coffee Break
11:00 – 12:30	**M. Levin**
	2 & 3D topological phases I
12:30 – 13:45	Lunch
14:00 – 15:30	**X. Chen**
	SPT & SET phases III
18:00 – 20:00	**Dessert on Flagstaff Mountain**
	busses leave south of C4C at 6pm

Tuesday, August 2th

9:00 – 10:30	**X. Chen**
	SPT & SET phases IV
10:30 – 11:00	Coffee Break
11:00 – 12:30	**M. Levin**
	2 & 3D topological phases II
12:30 – 13:45	Lunch
14:00 – 15:30	**X.-G. Wen**
	Theory of topological order I

Wednesday, August 3th

9:00 – 10:30	**M. Levin**
	2 & 3D topological phases III
10:30 – 11:00	Coffee Break
11:00 – 12:30	**L. Fu**

	Topological insulators - applications II
12:30 – 13:45	Lunch
14:00 – 15:30	**X.-G. Wen**
	Theory of topological order II

Thursday, August 4st

9:00 – 10:30	**M. Levin**
	2 & 3D topological phases IV
10:30 – 11:00	Coffee Break
11:00 – 12:30	**L. Fu**
	Topological insulators - applications III
12:30 – 13:45	Lunch
14:00 – 15:30	**X.-G. Wen**
	Theory of topological order III

Friday, August 5nd

9:00 – 10:30	**L. Fu**
	Topological insulators - applications IV
10:30 – 11:00	Coffee Break
11:00 – 12:30	**X.-G. Wen**
	Theory of topological order IV
12:30 – 13:45	Lunch
14:00 – 15:30	*Summary of the school*