

Quantum Connections in Sweden: Physics Summer School on Quantum Frontiers



10 – 22 June, 2019
Högberga Gård, Lidingö



Quantum Connections Summer School 2019, Program

Monday, 10 June 2019

Morning session			
09:00 – 09:30	Frank Wilczek Charles Kane	Opening session and Shoucheng Zhang Memorial Event	Fåhraesussalen, Högberga Gärd
09:30 – 10:30	Charles Kane	Topological Band Theory	Fåhraesussalen, Högberga Gärd
10:30 – 10:45	-	Coffee break – Discussions	
10:45 – 11:45	Charles Kane	Topological Band Theory	Fåhraesussalen, Högberga Gärd
11:45 – 13:00	-	Lunch break – Discussions	Restaurant, Högberga Gärd
Afternoon session			
13:00 – 15:00	Eduardo Fradkin	Dualities and Bosonization in Condensed Matter Physics and in Quantum Field Theory	Fåhraesussalen, Högberga Gärd
15:00 – 15:30	-	Coffee break – Discussions	
15:30 – 17:30	Charles Kane	Topological Insulators in 2D and 3D	Fåhraesussalen, Högberga Gärd
17:30 – 17:45	-	Break	
17:45 – 18:30	Charles Kane Eduardo Fradkin	Question/Answer	Fåhraesussalen, Högberga Gärd
19:00	-	Dinner	Restaurant, Högberga Gärd

Tuesday, 11 June 2019

Morning session			
09:30 – 10:30	Charles Kane	Topological Superconductivity	Fåhraesussalen, Högberga Gärd
10:30 – 10:45	-	Coffee break – Discussions	
10:45 – 11:45	Charles Kane	Topological Superconductivity	Fåhraesussalen, Högberga Gärd
11:45 – 13:00	-	Lunch break – Discussions	Restaurant, Högberga Gärd
Afternoon session			
13:00 – 15:00	Mikko Möttönen	Quantum electric circuits: basis for engineered quantum technological devices	Fåhraesussalen, Högberga Gärd
15:00 – 15:30	-	Coffee break – Discussions	
15:30 – 17:30	Wolfgang Lechner	Quantum Computation by Quantum Simulation	Fåhraesussalen, Högberga Gärd
17:30 – 17:45	-	Break	
17:45 – 18:30	Wolfgang Lechner	Question/Answer	Fåhraesussalen, Högberga Gärd
19:00	-	Dinner	Restaurant, Högberga Gärd

Wednesday, 12 June 2019

Morning session			
09:30 – 10:30	Jukka Pekola	Introduction to mesoscopic thermodynamics, Energy relaxation	Fåhraesussalen, Högberga Gärd
10:30 – 10:45	-	Coffee break – Discussions	
10:45 – 11:45	Jukka Pekola	Introduction to mesoscopic thermodynamics, Energy relaxation	Fåhraesussalen, Högberga Gärd
11:45 – 13:00	-	Lunch break – Discussions	Restaurant, Högberga Gärd
Afternoon session			
13:00 – 15:00	Eduardo Fradkin	Dualities and Bosonization in Condensed Matter Physics and in Quantum Field Theory	Fåhraesussalen, Högberga Gärd
15:00 – 15:30	-	Coffee break – Discussions	
15:30 – 17:30	Jukka Pekola	Thermometry, Refrigeration, Calorimetry	Fåhraesussalen, Högberga Gärd
17:30 – 17:45	-	Break	
17:45 – 18:30	Eduardo Fradkin Jukka Pekola	Question/Answer	Fåhraesussalen, Högberga Gärd
19:00	-	Dinner	Restaurant, Högberga Gärd

Thursday, 13 June 2019

Morning session

09:30 – 10:30	Wolfgang Lechner	Quantum Optimization	Fåhraesussalen, Högberga Gård
10:30 – 10:45	-	Coffee break – Discussions	
10:45 – 11:45	Wolfgang Lechner	Quantum Optimization	Fåhraesussalen, Högberga Gård
11:45 – 13:00	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

13:00 – 15:00	Jukka Pekola	Quantum thermodynamics experiments, Stochastic thermodynamics	Fåhraesussalen, Högberga Gård
15:00 – 15:30	-	Coffee break – Discussions	
15:30 – 17:30	Eduardo Fradkin	Dualities and Bosonization in Condensed Matter Physics and in Quantum Field Theory	Fåhraesussalen, Högberga Gård
17:30 – 17:45	-	Break	
17:45 – 18:30	Wolfgang Lechner Jukka Pekola Eduardo Fradkin	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Dinner	Restaurant, Högberga Gård

Friday, 14 June 2019

Morning session

09:30 – 10:20	Mikko Möttönen	Knots, monopoles, and skyrmions in a quantum order parameter	Fåhraesussalen, Högberga Gård
10:20 – 10:40	-	Coffee break – Discussions	
10:40 – 11:30	Egor Babaev	Nontrivial real space topological effects in superconductors	Fåhraesussalen, Högberga Gård
11:30 – 14:00	-	Lunch break – Discussions (Lunch starts at 12:00)	Restaurant, Högberga Gård

Afternoon session

14:00 – 14:50	Frank Wilczek	Axions: Basic Theory and Search Frontiers	Fåhraesussalen, Högberga Gård
14:50 – 15:00	-	Break	
15:00 – 15:50	Frank Wilczek	Axions: Basic Theory and Search Frontiers	Fåhraesussalen, Högberga Gård
15:50 – 16:10	-	Coffee break – Discussions	
16:10 – 17:00	Frank Wilczek	Axions: Basic Theory and Search Frontiers	Fåhraesussalen, Högberga Gård
17:00 – 17:10	-	Break	
17:10 – 18:00	Frank Wilczek	Axions: Basic Theory and Search Frontiers	Fåhraesussalen, Högberga Gård
18:00 – 18:45	Frank Wilczek Egor Babaev	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Dinner	Restaurant, Högberga Gård

Saturday, 15 June 2019

Morning session

10:00 – 11:00	Boris Svistunov	Worm Algorithm and Diagrammatic Monte Carlo	Fåhraesussalen, Högberga Gård
11:00 – 11:10	-	Break	
11:10 – 12:00	Boris Svistunov	Worm Algorithm and Diagrammatic Monte Carlo	Fåhraesussalen, Högberga Gård
12:00 – 13:30	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

13:30 – 15:00	Boris Svistunov	Worm Algorithm and Diagrammatic Monte Carlo	Fåhraesussalen, Högberga Gård
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Sunday, 16 June 2019

Morning session

-	-	Excursion to Stockholm Downtown	-
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Afternoon session

-	-	Excursion to Stockholm Downtown	-
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Monday, 17 June 2019

Morning session

09:30 – 10:20	Immanuel Bloch	TBA	Fåhraesussalen, Högberga Gård
10:20 – 10:40	-	Coffee break – Discussions	
10:40 – 11:30	Immanuel Bloch	TBA	Fåhraesussalen, Högberga Gård
11:30 – 14:00	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

14:00 – 14:50	Matthias Troyer	Analog quantum simulation Quantum annealing and quantum optimization	Fåhraesussalen, Högberga Gård
14:50 – 15:00	-	Break	
15:00 – 15:50	Matthias Troyer	Analog quantum simulation Quantum annealing and quantum optimization	Fåhraesussalen, Högberga Gård
15:50 – 16:10	-	Coffee break – Discussions	
16:10 – 17:00	Xiao-Gang Wen	Introduction of topological order and many-body entanglement	Fåhraesussalen, Högberga Gård
17:00 – 17:10	-	Break	
17:10 – 18:00	Xiao-Gang Wen	Introduction of topological order and many-body entanglement	Fåhraesussalen, Högberga Gård
18:00 – 18:45	Immanuel Bloch Matthias Troyer Xiao-Gang Wen	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Dinner	Restaurant, Högberga Gård

Tuesday, 18 June 2019

Morning session

09:30 – 10:20	Immanuel Bloch	TBA	Fåhraesussalen, Högberga Gård
10:20 – 10:40	-	Coffee break – Discussions	
10:40 – 11:30	Immanuel Bloch	TBA	Fåhraesussalen, Högberga Gård
11:30 – 14:00	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

14:00 – 14:50	Matthias Troyer	Quantum algorithms for physics simulations	Fåhraesussalen, Högberga Gård
14:50 – 15:00	-	Break	
15:00 – 15:50	Matthias Troyer	Quantum algorithms for physics simulations	Fåhraesussalen, Högberga Gård
15:50 – 16:10	-	Coffee break – Discussions	
16:10 – 17:00	Xiao-Gang Wen	Introduction of topological order and many-body entanglement	Fåhraesussalen, Högberga Gård
17:00 – 17:10	-	Break	
17:10 – 18:00	Xiao-Gang Wen	Introduction of topological order and many-body entanglement	Fåhraesussalen, Högberga Gård
18:00 – 18:45	Immanuel Bloch Matthias Troyer Xiao-Gang Wen	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Reception followed by dinner	Restaurant, Högberga Gård

Wednesday, 19 June 2019

Morning session

09:30 – 10:20	Jordan Cotler	Entangled Measurements and Quantum Information in Spacetime	Fåhraesussalen, Högberga Gård
10:20 – 10:40	-	Coffee break – Discussions	
10:40 – 11:30	Jordan Cotler	Entangled Measurements and Quantum Information in Spacetime	Fåhraesussalen, Högberga Gård
11:30 – 14:00	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

14:00 – 14:50	Yuo Chen Jian-Wei Pan	TBA	Fåhraesussalen, Högberga Gård
14:50 – 15:00	-	Break	
15:00 – 15:50	Yuo Chen Jian-Wei Pan	TBA	Fåhraesussalen, Högberga Gård
15:50 – 16:10	-	Coffee break – Discussions	
16:10 – 17:00	Xiao-Gang Wen	Introduction of topological order and many-body entanglement	Fåhraesussalen, Högberga Gård
17:00 – 17:10	-	Break	
17:10 – 18:00	Xiao-Gang Wen	Introduction of topological order and many-body entanglement	Fåhraesussalen, Högberga Gård
18:00 – 18:45	Jordan Cotler Yuo Chen Jian-Wei Pan Xiao-Gang Wen	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Dinner	Restaurant, Högberga Gård

Thursday, 20 June 2019

Morning session

09:30 – 10:20	Yuo Chen Jian-Wei Pan	TBA	Fåhraesussalen, Högberga Gård
10:20 – 10:40	-	Coffee break – Discussions	
10:40 – 11:30	Yuo Chen Jian-Wei Pan	TBA	Fåhraesussalen, Högberga Gård
11:30 – 14:00	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

14:00 – 14:50	Qi-Kun Xue	Introduction to molecular beam epitaxy (MBE) and scanning tunneling microscopy (STM)	Fåhraesussalen, Högberga Gård
14:50 – 15:00	-	Break	
15:00 – 15:50	Qi-Kun Xue	Introduction to molecular beam epitaxy (MBE) and scanning tunneling microscopy (STM)	Fåhraesussalen, Högberga Gård
15:50 – 16:10	-	Coffee break – Discussions	
16:10 – 17:00	Jordan Cotler	Entangled Measurements and Quantum Information in Spacetime	Fåhraesussalen, Högberga Gård
17:00 – 17:10	-	Break	
17:10 – 18:00	Jordan Cotler	Entangled Measurements and Quantum Information in Spacetime	Fåhraesussalen, Högberga Gård
18:00 – 18:45	Yuo Chen Jian-Wei Pan Qi-Kun Xue Jordan Cotler	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Dinner	Restaurant, Högberga Gård

Friday, 21 June 2019

Morning session

09:30 – 10:20	Steven Kivelson	The physics of superconducting transition temperatures	Fåhraesussalen, Högberga Gård
10:20 – 10:40	-	Coffee break – Discussions	
10:40 – 11:30	Steven Kivelson	The physics of superconducting transition temperatures	Fåhraesussalen, Högberga Gård
11:30 – 14:00	-	Lunch break – Discussions	Restaurant, Högberga Gård

Afternoon session

14:00 – 14:50	Qi-Kun Xue	Molecular beam epitaxy growth of topological insulators and realization of quantized anomalous Hall effect	Fåhraesussalen, Högberga Gård
14:50 – 15:00	-	Break	
15:00 – 15:50	Qi-Kun Xue	Molecular beam epitaxy growth of topological insulators and realization of quantized anomalous Hall effect	Fåhraesussalen, Högberga Gård
15:50 – 16:10	-	Coffee break – Discussions	
16:10 – 17:00	Yao Chen Jian-Wei Pan	TBA	Fåhraesussalen, Högberga Gård
17:00 – 17:10			
17:10 – 18:00	Yao Chen Jian-Wei Pan	TBA	Fåhraesussalen, Högberga Gård
18:00 – 18:45	Qi-Kun Xue Yao Chen Jian-Wei Pan Steven Kivelson	Question/Answer	Fåhraesussalen, Högberga Gård
19:00	-	Closing Ceremony and Midsummer party	Högberga Gård

See the program in your mobile device.



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