

Format of school / workshop:

**INTRODUCTORY
LECTURE**

7 (60'+ 45') lectures intended
to non-experts and students

**SHORT-
REVIEW**

7 1-hour short-review invited talks

DISCUSSION
panel

2 1¹/₂ hour discussion panels

Research

20 45' or 30' research talks

1 poster session

WEEK 1

	<i>Monday February 19</i>	<i>Tuesday February 20</i>	<i>Wednesday February 21</i>	<i>Thursday February 22</i>	<i>Friday February 23</i>
9:00	Norbert SCHUCH Tensor network crash course	Frédéric MILA Introduction to frustrated magnetism	Kirill SHTENGEL The physics of Majoranas	Laurens VANDERSTRAETEN Introduction to tensor networks	Sebastien CAUX TBA
10:00	Coffee	Coffee	Coffee	Coffee	Coffee
10:15	Andreas WEICHSELBAUM	Steve SIMON lecture #2	Frédéric MILA lecture #2	Kirill SHTENGEL lecture #2	Laurens VANDERSTRAETEN lecture #2
11:00	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
13:30	Discussions	Discussions	Discussions	Discussions	Discussions
16:30	Coffee	Coffee	Coffee	Coffee	Coffee
17:00	Steve SIMON Introduction to topological matter	Nicolas REGNAULT FQHS and SC heterostructures	Chairmen: Frédéric MILA & Steve SIMON	Tibor RAKOVSKY A. NIETNER	Alexander JAHN D. BONDARENKO
18:00	Thomas BARTHEL	Hong-Hao TU	Discussion session Topological order & Spin liquids /	<i>Posters / Reception</i>	Haijun LIAO
18:45					

WEEK 2

	<i>Monday February 26</i>	<i>Tuesday February 27</i>	<i>Wednesday February 28</i>	<i>Thursday March 1st</i>	<i>Friday March 2nd</i>
9:00	Dima ABANIN Many-body localization	M. STOUDEMIRE Introduction to machine learning	Silke BIERMANN Ab-initio computations	A. HACKENBROICH F. PARISEN TOLDIN	Piotr CZARNIK A. KSHETRIMAYUM
10:00	Coffee	Coffee	Coffee	Coffee	Coffee
10:15	Nicolas TARANTINO	Dima ABANIN Lecture #2	Miles STOUDEMIRE Lecture # 2	Silke BIERMANN Lecture # 2	Claudius HUBIG
11:00	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
13:30	Discussions	Discussions	Discussions	Discussions	Discussions
16:30	Coffee	Coffee	Coffee	Coffee	Coffee
17:00	Fakher ASSAAD Fermion QMC	Chairman: Roman ORUS Discussion session	Thorsten WAHL	Henrik DREYER David STEPHEN	Mike ZALETEL TBA
18:00	Miklos LAJKO	"Fermionic PEPS and beyond..."	Natalia CHEPIGA	Gabriel LEMARIÉ	Anna FRANCUZ
18:45			<i>Poster/Reception</i>		

45' talks :

1. *Gapless Spin-Liquid Ground State in the $S=1/2$ Kagome Antiferromagnet*

Haijun Liao, and Tao Xiang

2. *Generalization of the Haldane conjecture to $SU(N)$ spin chains*

Miklos Lajko, Kyle Wamer, Frederic Mila, Ian Affleck

3. *An introduction to spin structures in lattice models*

Nicolas Tarantino

4. *Energy Scales and Exponential Speedup in Thermal Tensor Network Simulations*

Andreas Weichselbaum

5. *Exactly solvable Kondo-like model with inverse-square interactions*

Hong-Hao Tu

6. *DMRG investigation of quantum dimer ladders*

Natalia Chepiga and Frederic Mila

7. *Error estimates for extrapolations with matrix-product states*

Claudius Hubig, Jutho Haegeman, Ulrich Schollwöck

8. *Weak Versus Strong Disorder Superfluid-Bose Glass Transition in One Dimension*

Gabriel Lemarié

9. *Typical 1d quantum systems at finite temperatures can be simulated efficiently on classical computers*

Thomas Barthel

30' talks :

1. *A simple tensor network algorithm for two-dimensional steady states*
A. Kshetrimayum, H. Weimer, R. Orús
2. *Symmetries of spin liquid PEPS with chiral $su(2)_1$ entanglement spectrum*
Anna Hackenbroich, Antoine Sterdyniak, Norbert Schuch
3. *Entanglement Hamiltonian of interacting fermionic models*
F. Parisen Toldin, F. F. Assaad
4. *Precise estimation of critical temperature by finite entanglement scalings with infinite PEPS*
Piotr Czarnik and Philippe Corboz
5. *Hydrodynamics of quantum information from random circuits*
Tibor Rakovszky, Curt von Keyserlingk, Shivaji Sondhi, Frank Pollmann
6. *Composite symmetry protected topological order and effective models*
A. Nietner, C. Krumnow, E. J. Bergholtz, J. Eisert
7. *PEPS with continuous virtual symmetries*
Henrik Dreyer, J. Ignacio Cirac and Norbert Schuch
8. *Computational power of symmetry-protected topological order*
David T. Stephen, Dong-Shen Wang, Abhishodh Prakash, Tzu-Chieh Wei, and Robert Raussendorf
9. *Extracting topological order from Projected Entangled Pair States*
Anna Francuz, Lukasz Cincio, Jacek Dziarmaga and Guifre Vidal

30' talks (continued):

10. Matchgate tensor networks and holography

Alexander Jahn

11. Tree tensor network approximations to conformal field theories

Dmytro Bondarenko, Robert Koenig, Volkher Scholz