

**Workshop 1 on “Computational aspects of Tensor Networks”****September 12 - 16, 2022****of the Thematic Programme on****“Tensor Networks: Mathematical Structures and Novel Algorithms”****August 29 - October 21, 2022, organized by****Frank Pollmann (TU Munich), Norbert Schuch (U Vienna), Frank Verstraete (Ghent U)****• Monday, September 12th, 2022**09:00 – 10:10 **Registration and Welcome**10:10 – 11:00 **Coffee break**11:00 – 11:45 **Natalia Chepiga (TU Delft)***Eight-vertex criticality in the interacting Kitaev chain*11:45 – 12:30 **Örs Legeza (WIGNER RCP, Budapest)***TBA*12:30 – 14:30 **Lunch break**14:30 – 15:15 **Andreas Weichselbaum (BNL, Upton)***Non-abelian symmetries in tensor networks: the open source QSpace tensor library*15:15 – 15:45 **Coffee break**15:45 – 16:30 **Ian McCulloch (U of Queensland, Brisbane)***Detecting and characterising dynamical quantum phase transitions through higher moments***• Tuesday, September 13th, 2022**09:00 – 10:10 **Stefanos Kourtis (UdeS)***Fast counting with tensor networks**(Blackboard talk)*10:10 – 11:00 **Coffee break**11:00 – 11:45 **Ivan Oseledets (Moscow)***Tensor methods and their applications*11:45 – 12:30 **Esperanza López Manzanares (UAM-CSIC, Madrid)***Algebraic Bethe Circuits*12:30 – 14:30 **Lunch break**14:30 – 15:15 **Miles Stoudenmire (Flatiron Inst., New York)***Disentangling Interacting Systems with Gaussian Tensor Networks*15:15 – 15:45 **Coffee break**15:45 – 16:30 **Luca Tagliacozzo (CSIC, Madrid)***out-of-equilibrium evolution and tensor networks*16:30 – **Poster session**

- **Wednesday, September 14th, 2022**

09:00 – 10:10 **Antoine Tilloy (MINES ParisTech)**  
*Attacking 1+1 dimensional field theories with relativistic CMPS*  
(Blackboard talk)

10:10 – 11:00 **Coffee break**

11:00 – 11:45 **Bram Vanhecke (U Vienna)**  
*Continuous Tensor Networks for Lattice Models*

11:45 – 12:30 **Philippe Corboz (U Amsterdam)**  
*TBA*

12:30 – 14:30 **Lunch break**

14:30 – 15:15 **Piotr Czarnik (Jagiellonian U, Krakow)**  
*iPEPS simulations of strongly correlated systems at finite temperature*

15:15 – 15:45 **Coffee break**

15:45 – 16:30 **Didier Poilblanc (U Paul Sabatier, Toulouse)**  
*Simulating chiral spin liquids with projected entangled-pair states*

- **Thursday, September 15th, 2022**

09:00 – 10:10 **Naoki Kawashima (U Tokyo)**  
*Tensor-network-representable quantum states*  
(Blackboard talk)

10:10 – 11:00 **Coffee break**

11:00 – 11:45 **Anna Francuz (U Vienna)**  
*Determining topological order with iPEPS*

11:45 – 12:30 **Andreas Läuchli (PSI, Villigen)**  
*Accurate CFT data and velocities from iMPS simulations*

12:30 – 14:30 **Lunch break**

14:30 – 15:15 **Jörg Schmiedmayer (TU Vienna)**  
*Generalized Hydrodynamics and the emergence of fermionic signatures in bosonic 1d systems*

15:15 – 15:45 **Coffee break**

15:45 – 16:30 **Laurens Vanderstraeten (Ghent U)**  
*Spectral functions of 2-D quantum spin liquids*

19:00 – **Conference dinner**

*Registration required. See your profile page for details and registration.*

- **Friday, September 16th, 2022**

09:00 – 10:10 **Roger Mong (U Pittsburgh)**  
*Mutual information and reflected entropies of random states*  
(Blackboard talk)

10:10 – 11:00 **Coffee break**

11:00 – 11:45 **Simone Montangero (U Padova)**  
*Tensor network algorithms for high-dimensional quantum many-body systems*

11:45 – 12:30 **Atsushi Ueda (ISSP, U of Tokyo)**  
*Anatomy of 2D classical lattice models with TN*

**All talks take place at ESI Boltzmann Lecture Hall! Wearing an FFP2 mask is mandatory!**