



# The 39th International Symposium on Lattice Field Theory (Lattice 2022)

## Monday, August 8, 2022

### Algorithms: Algorithms I - CP1-HSZ/1st-1.004 - HS7 (2:00 PM - 4:00 PM)

-Conveners: Urs Wenger

time	[id] title	presenter
2:00 P	[M141] Flow-based density of states for complex actions	URBAN, Julian
2:20 P	[M143] Stochastic normalizing flows for lattice field theory	CELLINI, Elia
2:40 P	[M146] Kernel controlled real-time Complex Langevin simulation	ALVESTAD, Daniel
3:00 P	[M129] Gauge-equivariant flow models for sampling in lattice field theories with pseudofermions	ROMERO-LOPEZ, Fernando
3:20 P	[M176] Automatic differentiation for stochastic processes	TELO, Guilherme
3:40 P	[M102] Applying the worldvolume tempered Lefschetz thimble method to lattice field theories	Prof. FUKUMA, Masafumi

### Algorithms: Algorithms II - CP1-HSZ/1st-1.004 - HS7 (4:30 PM - 6:30 PM)

-Conveners: Simone Bacchio

time	[id] title	presenter
4:30 P	[M149] Status update on flow models for gauge field generation	SHANAHAN, Phiala
4:50 P	[M142] Exploration of Efficient Neural Network for Path Optimization Method	NAMEKAWA, Yusuke
5:10 P	[M140] Reducing the Sign Problem using Line Integrals	LARSEN, Rasmus
5:30 P	[M179] Topology changing update algorithms for SU(3) gauge theory	EICHHORN, Timo
5:50 P	[M146] Machine Learning Trivializing Maps	MARSH ROSSNEY, Joe
6:10 P	[M105] Learning trivializing flows	ALBANDEA, David

## Tuesday, August 9, 2022

### Algorithms: Algorithms III - CP1-HSZ/1st-1.004 - HS7 (2:00 PM - 4:00 PM)

-Conveners: Michael Fromm

time	[id] title	presenter
2:00 PM	[M141] Overcoming exponential volume scaling in quantum simulations of lattice gauge theories	KANE, Christopher
2:20 PM	[M120] Exploring the phase structure of the multi-flavor Schwinger model with quantum computing	KÜHN, Stefan
2:40 PM	[M115] Digitizing $\mathrm{SU}(2)$ gauge fields and what to look out for when doing so	JAKOBS, Timo
3:00 PM	[M136] Defining Canonical Momenta for Discretised $\mathrm{SU}(2)$ Gauge Fields	URBACH, Carsten
3:20 PM	[M191] Toward Quantum Computing Phase Diagrams of Gauge Theories with Thermal Pure Quantum States	POWERS, Connor
3:40 PM	[M182] Quantum state preparation algorithms for the Schwinger model with a $\theta$ term	BAZAVOV, Alexei

### Algorithms: Algorithms IV - CP1-HSZ/1st-1.004 - HS7 (4:30 PM - 6:30 PM)

-Conveners: Alexei Bazavov

time	[id] title	presenter
4:30 PM	[M143] Real time evolution and a traveling excitation in $\mathrm{SU}(2)$ pure gauge theory on a quantum computer.	MENDICELLI, Emanuele
4:50 PM	[M134] Determining the Mass Renormalization of the Schwinger Model with Wilson Fermions using Tensor Networks	Mr ANGELIDES, Takis
5:10 PM	[M193] Improving Quantum Simulations towards lattice $\mathrm{SU}(3)$	LAMM, Henry
5:30 PM	[M141] Quantum Computing for Open Systems	SAMBASIVAM, Bharath

## Wednesday, August 10, 2022

### Algorithms: Algorithms V - CP1-HSZ/1st-1.004 - HS7 (2:00 PM - 4:00 PM)

-Conveners: Lena Funcke

time	[id] title	presenter
2:00 P	[M50] $S_D_n$ Lattice Gauge Theory on the Quantum Annealer	FROMM, Michael
2:20 P	[M04] Quantum computing for lattice supersymmetry	CULVER, Christopher
2:40 P	[M9] Grassmann tensor-network method for strong-coupling QCD	BLOCH, Jacques
3:00 P	[M46] Toward tensor renormalization group study of three-dimensional non-Abelian gauge theory	KUWAHARA, Takaaki
3:20 P	[M38] Entanglement filtering and improved coarse-graining on two dimensional tensor networks including fermions	SAKAI, Ryo
3:40 P	[M03] Symmetry breaking in an extended-O(2) model	HOSTETLER, Leon

### Algorithms: Algorithms VI - CP1-HSZ/1st-1.004 - HS7 (4:30 PM - 6:30 PM)

-Conveners: Akio Tomiya

time	[id] title	presenter
4:30 P	[M52] Density of states techniques for fermion worldlines	GATTRINGER, Christof
4:50 P	[M86] Improved lattice method for determining entanglement measures in SU(N) gauge theories	RINDLISBACHER, Tobias
5:10 P	[M95] Error Reduction using Machine Learning on Ising Worm Simulation	KIM, Jangho
5:30 P	[M45] An ML approach to the classification of phase transitions in many flavor QCD	NEUMANN, Marius
5:50 P	[M70] Generative models for scalar field theories: how to deal with poor scaling?	KOMIJANI, Javad
6:10 P	[M57] Mitigating the Hubbard Sign Problem. A Novel Application of Machine Learning	RODEKAMP, Marcel

# Thursday, August 11, 2022

## Algorithms: Algorithms VII - CP1-HSZ/1st-1.004 - HS7 (9:00 AM - 11:00 AM)

-Conveners: Fernando Romero-Lopez

time	[id] title	presenter
9:00 AM	<a href="#">M159</a> ] Infinite Variance in Fermionic Systems	YUNUS, Cagin
9:20 AM	<a href="#">M112</a> ] Oscillating Autocorrelation and the HMC Algorithm	ZIMMERMANN, Falk
9:40 AM	<a href="#">M113</a> ] Transfer matrices and temporal factorization of the Wilson fermion determinant	WENGER, Urs
10:00 AM	<a href="#">M201</a> ] MLMC++ as a variance reduction method	Mr KHALIL, Mostafa
10:20 AM	<a href="#">M108</a> ] Deflation in multigrid multilevel Monte Carlo	RAMIREZ-HIDALGO, Gustavo
10:40 AM	<a href="#">M106</a> ] Towards the Application of Skewed Detailed Balance in Lattice Gauge Theories	PINTO BARROS, Joao C.

## Algorithms: Algorithms VIII - CP1-HSZ/1st-1.004 - HS7 (11:30 AM - 12:50 PM)

-Conveners: Jacques Bloch

time	[id] title	presenter
11:30 AM	<a href="#">M108</a> ] Efficiently unquenching electromagnetism in QCD+QED	HARRIS, Tim
11:50 AM	<a href="#">M107</a> ] Circuitizing product formulas for (1+1)D SU(2) lattice gauge theories: Lessons from alternative formulations	STRYKER, Jesse
12:10 PM	<a href="#">M104</a> ] On the determination of the strong QCD coupling at the Z-pole with new gradient-flow based beta-function	WONG, Chik Him (Ricky)
12:30 PM	<a href="#">M201</a> ] T-mu phase diagram using classical-quantum hybrid algorithm	TOMIYA, Akio