TSRC Workshop

Scientific Applications of Quantum Annealers

Dates
11-June-2022 - 15-June-2022

Venue
Telluride Intermediate School
725 W Colorado Ave Telluride, CO

TSRC Host
Mark Kozak mark@telluridescience.org / 970.708.4426

Breakfast
Breakfast will be served in the common area outside of the workshop classrooms.

Lunches
NOT included in registration.

Notes

Friday June 10th – 5:00 to 6:30 pm Meet and Greet at the Phoenix Bean (221 W Colorado Ave)

The scientific program starts at 9:00 am on Saturday, June 11th, ends at noon on Wednesday.

Sunday 12th afternoon is reserved for group discussions, collaborations, etc.

Each talk is scheduled for 30 minutes + 10 minutes for Q & A.

Interruptions and questions during talks are encouraged.

On Monday June 13th - 5:30 to 7:30 pm, there will be a group picnic (BBQ, salad and beverages) in the tent outside of the TSRC facility (covered through your registration fees).

All times are in MDT (UTC-6).

This will be a “hybrid” live/remote meeting. To join remotely, please use this link and passcode:

https://us06web.zoom.us/j/87485604306?pwd=NEE5VVdyNWtjbFVLWDJBWjJxRE5NQT09

Meeting ID: 874 8560 4306
Passcode: 958808
Find your local number: https://us06web.zoom.us/u/kA73lFOc4

Saturday, 11th of June

Morning

8:30 am	*Breakfast*
9:00 am	Opening remarks/Welcome (Organizers & Mark Kozak)
9:15 am	**Trevor Lanting** (DWAVE) Quantum Annealing Processor Development at D-Wave
9:55 am	**Allison MacDonald** (DWAVE) Coherent quantum annealing with D-Wave technology
10:35 am	C*offee Break*
10:55 am	**Carleton Coffrin** (LANL) High-Quality Thermal Gibbs Sampling with Quantum Annealing Hardware
11:35 am	**Tameem Albash** (University of New Mexico)
12:15 pm	*Lunch (on your own)*

Afternoon

2:00 pm	**Evgeny (Jenia) Mozgunov** (University of Southern California) Paramagnetic trees
2:40 pm	**Avadh Saxena** (LANL) Non-hermitian quantum systems
3:20 pm	*Coffee Break*
3:40 pm	**Masoud Mohseni** (Google) (Remote)
4:20 pm	**Cristiano Nisoli** (LANL)
5:00 pm	**Adjourn**

Sunday, 12th of June

Morning

8:30 am	*Breakfast*
9:00 am	**Arnab Barnajee** (Purdue University)
9:40 am	**Andrew King** (DWAVE) Quantum critical spin-glass dynamics
10:20 am	C*offee Break*
10:40 am	**Nicholas Chancellor** (Durham University) How quantum annealing solves problems
11:20 am	**Alex Zucca** (DWAVE) A hybrid algorithm for solving larger-than-chip lattice problems.
12:00 pm	**Adjourn**

Afternoon

2:00 pm	**Free time**

Monday, 13th of June

Morning

8:30 am	*Breakfast*
9:00 am	**Adolfo del Campo** (University of Luxembourg) (Remote) Topological defects in a QA: Kibble-Zurek mechanism and beyond
9:40 am	**Steven Abel** (Durham) (Remote) Towards quantum field theory on quantum annealers
10:20 am	*Coffee Break*
10:40 am	**Kristel Michielsen** (Forschungszentrum Jülich) (Remote) Tail assignment problem
11:20 am	**Paul Warburton** (University College London) Excited States in Quantum Annealing
12:00 pm	*Lunch (on your own)*

Afternoon

2:00 pm	**Scott Pakin** (LANL) (Remote) Quantum Programming Made Easy
2:40 pm	**Denny Dahl** (Cold Quanta) QUBOs, Polytopes, Symmetry and all that
3:20 pm	*Coffee Break*
3:40 pm	**Travis Humble** (ORNL) (Remote)
4:20 pm	**Masayuki Ohzeki** (Tohoku University) (Remote) Various practical applications of quantum annealing
5:00 pm	**Adjourn and group picnic**

Tuesday, 14th of June

Morning

8:30 am	*Breakfast*
9:00 am	**Sebastian Deffner** (University of Maryland) (Remote) Assessing nonequilibrium excitations in quantum annealers
9:40 am	**Pol Forn-Díaz** (Institut de Física d'Altes Energies) (Remote) AVaQus project progress
10:20 am	C*offee Break*
10:40 am	**Susan Mniszewski** (LANL) (Remote) Solving Chemistry Problems using Quantum Annealing
11:20 am	**Vikram Mulligan** (Flatiron Institute) Quantum annealers for peptide and protein design
12:00 pm	*Lunch (on your own)*

Afternoon

2:00 pm	**Steve Weber** (MIT's Lincoln Lab.) (Remote) Lincoln Lab's Quantum Annealing Testbed
2:40 pm	**Wade DeGottardi** (Texas Tech University) Circuit Dynamics Model of Superconducting Annealing
3:20 pm	*Coffee Break*
3:40 pm	**Alejandro Lopez** (LANL) Frustrated magnetic lattices.
4:20 pm	**Brainstorming time: opinions, ideas & solutions**
5:00 pm	**Adjourn**

Wednesday, 15th of June

Morning

8:30 am	*Breakfast*
9:00 am	Informal Discussions, Collaborations ...
12:00 pm	***Closure***