WKS19 - Distributed Quantum Computing
Algorithms, Networks, Software, and Applications
Wednesday, September 18, 2024 at QCE24
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Where and When

10:00- 16:30: 3 x 1.5 hour sessions in Room 518ABC
WSK19 at QCE
QCE Program-at-a-Glance clickable cells: room and details

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Constraints

Total time: 3 x 1.5 hrs = 4.5 hrs **or** 3 x 90 mins = 270 mins
Total number of speakers: 7
Total number of talks: 8
Introduction time: 15 mins
Talk time: 20 mins presentation + 5 mins questions

Session I: 10:00-11:30 in Room 518ABC

Title	Presenter	Length	Time
Workshop Introduction and Overview	Workshop organizers	15 mins.	10:00-10:15
Generalised Circuit Partitioning for Distributed Quantum Computing	Felix Burt	20 + 5 mins	10:15-10:40
Distributed Quantum Computing through Circuit Cutting	Pouya Kananian	20 + 5 mins	10:40-11:05

Execution Management of Distributed Quantum Computing Jobs	Davide Ferrari	20 + 5 mins	11:05-11:30

Session II: 13:00-14:30 Room 518ABC

Title	Presenter	Length	Time
A Distributed Quantum Computing Software Platform for Hybrid Algorithm Experiments	Angadh Singh	20 + 5 mins	13:00-13:25
Noise-Aware Distributed Quantum Approximate Optimization Algorithm on Near-term Quantum Hardware	Kuan-Cheng Chen	20 + 5 mins	13:25-13:50
Gate Teleportation in Noisy Quantum Networks with the SquidASM Simulator	Valter Uotila	20 + 5 mins	13:50-14:15
Discussion Primer		15 mins	14:15-14:30

Session III: 15:00-16:30 PM in Room 518ABC

Title	Presenter	Length	Time
Applying an Evolutionary Algorithm to Minimize Teleportation Costs in Distributed Quantum Computing	Leo Sünkel	20 + 5 mins	15:00-15:25
Distributed Quantum Computing for Chemical Applications	Grier Jones	20 + 5 mins	15:25-15:50

Open Discussion: Towards a Distributed Quantum Computing Roadmap	Workshop organizers	40 mins	15:50-16:30

Talks Titles and Presenters

Titles	Presenters	Paper	Confirmed	Slot Assigned
Gate Teleportation in Noisy Quantum Networks with the SquidASM Simulator	Valter Uotila	Yes	Yes	Yes
Noise-Aware Distributed Quantum Approximate Optimization Algorithm on Near-term Quantum Hardware	Kuan-Cheng Chen	Yes	Yes	Yes
Generalised Circuit Partitioning for Distributed Quantum Computing	Felix Burt	Yes	Yes	Yes
Distributed Quantum Computing for Chemical Applications	Grier Jones	Yes	Yes	Yes
Execution Management of Distributed Quantum Computing Jobs	Davide Ferrari	Yes	Yes	Yes
Applying an Evolutionary Algorithm to Minimize Teleportation Costs in Distributed Quantum Computing	Leo Sünkel	Yes	Yes	Yes
A Distributed Quantum Computing Software Platform for Hybrid Algorithm Experiments	Angadh Singh	No	Yes	Yes
Distributed Quantum Computing through Circuit Cutting	Pouya Kananian	No	Yes	Yes

Additional Events Related to Distributed Quantum Computing

Title	Time

NET-SEC1: Quantum Secure Networks I	Tuesday, 10:00-11:30
Tutorial TUT15 — Quantum Internet: Wiring the Weirdness (Caleffi)	Tuesday, 13:00-16:30
Tutorial: TUT27 — Introduction to CUDA-Q and Distributed Quantum Computing — Part 1 (NVIDIA)	Thursday, 10:00-14:30
SYS-DQC: Distributed Computing (QSYS Technical Paper Track)	Thursday, 10:00-11:30
NET-DQC: Distributed Computing (QNET Technical Paper Track)	Thursday, 13:00-14:30
PHO-APPS: Quantum Photonics and Applications ***Li Qian - University of Toronto (Invited Talk)*** ***"****In-fber hyper- and hypo-entangled photon sources: Generation and Applications****" (P41)***	Friday 15:00 - 15:25
Tutorial: TUT34 — Introduction to CUDA-Q and Distributed Quantum Computing — Part 2 (NVIDIA)	Friday, 10:00-14:30