IEEE International Conference on Quantum Computing and Engineering — QCE23

QCE23 Workshop on Quantum Computing Opportunities in Renewable Energy and Climate Change

Organizers: Annarita Giani (GE Research), Zhenyu (Henry) Huang (PNNL)

Wednesday September 20th, 2023

Times are given in Pacific Time (PT, UTC-7)

Session 1 (Keynotes + 1 Talk, 2 hours)

10:00-10:15 Welcome Annarita Giani (GE Research), Zhenyu (Henry) Huang (PNNL)

10:15-10:45 **Keynote**: **Current and Future Quantum Applications for Energy at DOE, Rima Oueid,** U.S. Department of Energy (20+10)

10:45-11:15 **Keynote**: **Quantum Networks: An Industry Perspective Corey McClelland**, Qubitekk CRO (20+10)

11:15-11:45 Quantum computing in the energy sector: early feedback and challenges for a large power utility company Etienne Decossin, EDF R&D (25+5)

11:45-12:00 ***Wrap up session 1*** *(Annarita and Henry)*

12:00-13:00 Break

Session 2 (3 Talks, 1.5 hours)

13:00-13:30 Preparation of the highly frustrated Ground State of a Kagome Lattice Heisenberg spin ½ Model using the Variational Quantum Eigensolver Charu Jain, University of Southern California (25+5)

13:30-14:00 Early Exploration of a Flexible Framework for Efficient Quantum Linear Solvers in Power Systems, **Yousu Chen**, PNNL (25+5)

14:00-14:30 Enhancing the Operation and Control of Renewable Energy Systems through Quantum Computing Technology Yan Li, *Penn State University* (25+5)

14:30-15:15 Afternoon Break

Session 3 (Panel Discussion, 1.5 hours)

15:15-16:45 ***Panel Discussion (moderator:) (1.5 hours)***

- Speaker 1: **Kortny Rolston-Duce,** Atom Computing
- Speaker 2: **Sayon Chanda**, NREL
- Speaker 3: **Honghao Zheng**, ComEd (virtual)
- Speaker 4: **Rajkumar Kettimuthu,** Quantum Comm Simulator
  - Presentations - 40 mins (10 each)
  - Discussion/Questions from organizers - 30 mins
  - Questions from audience - 20 mins

16:45-16:45 Workshop ***Wrap up*** Annarita, Henry