



Contribution ID: 248

Type: **Oral presentation**

## From tensors to qubits

*Monday, 26 July 2021 13:00 (15 minutes)*

We discuss recent progress in Tensor Lattice Field Theory and economical, symmetry preserving, truncations suitable for quantum computations/simulations. We focus on spin and gauge models with continuous Abelian symmetries such as the Abelian Higgs model and emphasize noise-robust implementations of Gauss's law. We discuss recent progress concerning the comparison between field digitizations and character expansions, symmetry breaking in tensor language, wave-packet preparation and possible new implementations of Abelian models using Rydberg atoms.

**Primary author:** MEURICE, Yannick (University of Iowa)

**Co-authors:** BAZAVOV, Alexei (Michigan State University); DREHER, Patrick (NC State University); GUSTAFSON, Erik (University of Iowa); HOSTETLER, Leon (MSU); Dr SAKAI, Ryo (University of Iowa); TSAI, Shan-Wen; UNMUTH-YOCKEY, Judah (Fermi National Laboratory); ZHANG, Jin (University of Iowa)

**Presenter:** MEURICE, Yannick (University of Iowa)

**Session Classification:** Algorithms (including Machine Learning, Quantum Computing, Tensor Networks)

**Track Classification:** Algorithms (including Machine Learning, Quantum Computing, Tensor Networks)