

Roundtable discussion: TNS and TNRG for lattice field theories

- Participants
 - Mari Carmen Banuls (MPQ)
 - Ignacio Cirac (MPQ)
 - Yannick Meurice (U. Iowa)
- Discussion leader
 - Karl Jansen (NIC, DESY)

Questions to roundtable participants

- since this field is new for many of us:
Are there good introductory lectures?
- I have heard about
real time evolution, string breaking, chemical potential, θ -terms:
What about scattering phenomena?
- Very often staggered fermions are used, because of JWT:
Are there general fermion formulations?
- I have heard about many nice works in $1 + 1$ -dimensions, but:
What is the prospect of higher dimensions?:
What is the main difficulty for higher dimensions?:
Have higher dimensions been tried in spin models?:
- Quantum simulators have already been used:
What is the prospect to quantum simulate gauge theories?
In higher dimensions?

Questions from the audience?

Questions from the roundtable participants?

Review references

Lattice gauge theories simulations in the quantum information era

Cont. Phys. (2016), 1-25

arxiv.org: 1602.03776

arXiv:1305.1602

Ultracold Quantum Gases and Lattice Systems: Quantum Simulation of Lattice Gauge Theories

U.-J. Wiese

Quantum Simulations of Lattice Gauge Theories using Ultracold Atoms in Optical Lattices

Erez Zohar, J. Ignacio Cirac, Benni Rezn

Journal-ref: Rep. Prog. Phys. 79 014401 2016

Tour in the Lab

- Tour takes place Saturday 14:00
- We meet at 13:30 in the Foyer, we will then walk over to the Lab
- Please send e-mail to Y. Meurice (yannick-meurice@uiowa.edu) if you are interested
- Number of participants is limited to 20

