

## Conclusions

- The variational principle makes sense for many-body quantum systems: physical (low-energy) states live in a tiny corner of Hilbert space
- In case of gapped 1 dimensional quantum systems, this corner seems to have been identified
  - Classification of phases, symmetry protected order, ...
- It is possible to develop quantum field theory along those lines in 1+1 dimensions:
  - Continuous Matrix Product States seem to capture the low-energy physics of 1+1 dimensional quantum field theories (both relativistic and non-relativistic)
  - Leads to matrix version of Gross-Pitaevskii / Bogoliubov-deGennes
- Intriguing connections between quantum field theory, quantum measurement theory, dissipative non-equilibrium phenomena and the holographic principle