Nonequilibrium quantum and statistical physics group

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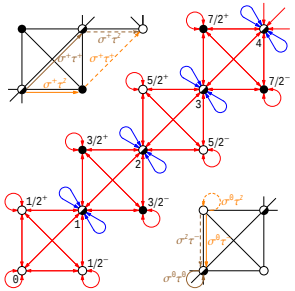

Selected publications in the fields related to quantum technologies:

- Influence of environment
  - T. Prosen and M. Žnidarič, *Can quantum chaos enhance the stability of quantum computation?*, J. Phys. A **34**, L681 (2001).
- Quantum algorithms
  - M. Žnidarič, *Scaling of the running time of the quantum adiabatic algorithm for propositional satisfiability*, Phys. Rev. A **71**, 062305 (2005); M. Žnidarič and M. Horvat, *Exponential complexity of an adiabatic algorithm for an NP-complete problem*, Phys. Rev. A **73**, 022329 (2006).
  - D. Braun, O. Giraud, I. Nechita, C. Pellegrini, and M. Žnidarič, *A universal set of qubit quantum channels*, J. Phys. A **47**, 135302 (2014).
- Quantum resources
  - M. Žnidarič, *Exact convergence times for generation of random bipartite entanglement*, Phys. Rev. A **78**, 032324 (2008).
  - U. Marzolino and T. Prosen, *Quantum metrology with nonequilibrium steady states of quantum spin chains*, Phys. Rev. A **90**, 062130 (2014).
  - M. Žnidarič, *Dissipative remote-state preparation in an interacting medium*, Phys. Rev. Lett. **116**, 030403 (2016).
- Non Markovian effects
  - M. Žnidarič, C. Pineda, and I. Garcia-Mata, *Non-Markovian behavior of small and large complex quantum systems*, Phys. Rev. Lett. **107**, 080404 (2011).
- Exact solutions far from equilibrium and non-equilibrium states of matter
  - T. Prosen and I. Pižorn, *Quantum phase transition in a far from equilibrium steady state of XY spin chain*, Phys. Rev. Lett. **101**, 105701 (2008).
  - M. Žnidarič, *Exact solution for a diffusive nonequilibrium steady state of an open quantum chain*, J. Stat. Mech. 2010, L05002 (2010).
  - T. Prosen, *Open XXZ Spin Chain: Nonequilibrium Steady State and a Strict Bound on Ballistic Transport*, Phys. Rev. Lett. **106**, 217206 (2011).
  - T. Prosen, *Exact Nonequilibrium Steady State of an Open Hubbard Chain*, Phys. Rev. Lett. **112**, 030603 (2014).