

Exact dynamics with free fermions in disguise.

A large class of free fermionic spin chain models 2305.15625, 2310.19897, 2402.02984 have been found recently, that are not soluble by a Jordan-Wigner transformation, but by some more complex construction introduced in the original work 1901.08078 of Fendley, that rather resembles the methods to solve integrable systems. In 2405.20832 we relied on these techniques to calculate the correlation functions of local operators in Fendley's model and also established a scheme to measure them on a quantum computer. Thus, it is another example of a classically simulable quantum system, that may also be used for benchmarking these hardware. In my talk, I will introduce the audience to the free fermions in disguise models and explain how to solve their dynamics.

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