

Quasilocal conservation laws in integrable and nearly-integrable quantum spin chains

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I will discuss analytical and numerical approaches towards construction of exactly conserved quasilocal operators in quantum spin chains. In integrable chains, such as in XXX and XXZ models, I will describe a transfer matrix technique which allows to construct a set of conserved quasilocal operators going beyond the well known local set. In nearly integrable chains, I will describe a systematic numerical procedure which shows how these conserved quantities deform into optimally almost conserved quantities, and discuss particular cases, where exactly conserved quasilocal quantities survive integrability breaking.

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