

Abstract Submitted  
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**Emergent quasi-integrals of motion in a non-integrable quantum spin chain** CHENG-JU LIN, OLEXEI MOTRUNICH, California Institute of Technology — We study translationally-invariant operators which approximately commute with the Hamiltonian of a non-integrable quantum spin chain, using the technique of so-called "slow operators" developed in H. Kim et. al., Phys. Rev. E 92, 012128. In the strong coupling limit, the slow operator can be understood using the local Schrieffer-Wolff transformation and appears to be localized or at least quasi-localized. The existence of such an operator indicates possibility of a partial breakdown of the eigenstate thermalization hypothesis (ETH).

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