

Abstract Submitted  
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**Interplay between anisotropy and dimensionality in few-body bound states of quantum magnets**<sup>1</sup> JUGAL TALUKDAR, D. BLUME, University of Oklahoma — Spin systems have been studied extensively for many decades and ultracold atoms provide a new pathway for realizing and probing spin systems. The Heisenberg Hamiltonian, e.g., has been realized experimentally using cold atoms loaded into optical lattices and two-magnon bound states have been probed. We include an anisotropy in the Heisenberg Hamiltonian and analyze the resulting eigen spectrum and eigen states. Specifically, we report our theoretical progress on understanding the criteria for the existence of two- and three-body bound states in different dimensions.

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