

Abstract Submitted
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Elementary excitations in antiferromagnetic Heisenberg spin segments. MARCO AFFRONTE, CNR-INFM-S3 and University of Modena, ALBERTO GHIRRI, MARCO EVANGELISTI, ANDREA CANDINI, CNR-INFM-S3, STEFANO CARRETTA, PAOLO SANTINI, GIUSEPPE AMORETTI, University of Parma, Dpt of Physics, RACHEL DAVIES, GRIGORE TIMCO, RICHARD WINPENNY, University of Manchester, CNR-INFM-S3 TEAM, UNIVERSITY OF PARMA TEAM, UNIVERSITY OF MANCHESTER TEAM — We report on *ac*-susceptibility, low temperature magnetization and specific heat measurements on molecular compounds, shortly named $(\text{Cr}_6)_2$, $(\text{Cr}_7)_2$, Cr_8Cd , $(\text{NiCr}_6)_2\text{Zn}$, that comprise different variants of spin arrays. These systems constitute real examples of collections of identical antiferromagnetic Heisenberg spin segments. We indeed show that this picture, with dominant exchange term in the spin Hamiltonian (J/k_B ranging from 13 to 16 K in all compounds) and weak anisotropy term, fits well the measured physical properties. The character of energy spectra and the low lying magnetic excitations are discussed accordingly. The direct comparison of experimental results and of the energy spectra of these variants with those of similar cyclic spin systems evidences effects associated to: i) the breaking the cyclic boundary conditions and ii) odd and even nuclearity of spin segments.

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