

Theory of the copper nuclear spin-lattice relaxation in CuGeO₃

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Abstract

Within the framework of the one-dimensional $S=1/2$ Heisenberg model with a next-nearest-neighbor antiferromagnetic interaction, a theory of the copper spin-lattice relaxation in the uniform state of the spin-Peierls compound CuGeO₃ is presented. The main contribution to the relaxation rate at intermediate and high temperatures is due to the spin diffusive long-wave processes. A comparison of our results with experimental data shows that the theory is able to reproduce the main features of the temperature dependence of the copper relaxation rate. ©2000 The American Physical Society.
