

The ^{55}Mn Spin Echo Test of Magnon BEC State in MnCO_3

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Abstract

© 2017 Springer-Verlag Wien The coherent quantum state of magnons—Bose-Einstein condensate (BEC) has been observed in several types of antiferromagnets. According to the Bose statistics of magnons, BEC appears when the magnon density exceeds the critical density N_{BEC} and the magnon gas condenses to a quantum liquid. The BEC state is characterized by a coherent precession of the magnetization. In this paper, the first experiments showing the suppression of the spin echo signal by the magnon BEC is presented. These experiments confirm the coherence of magnetic excitations in the BEC state.

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