Magnon BEC in $RbMnF_3$ and $MnCO_3$ at a temperature about 1 K

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The Bose-Einstein condensation (BEC) of magnons and Spin Superfluidity were discovered in 1984 in superfluid ^{3}He-B.[1] Recently the magnon BEC was demonstrated in solid antiferromagnets.[2] Here we report a very recent results of magnon excitation and its Bose-Einstein condensation in antiferromegnets with dynamical shift of Nuclear Magnetic Resonance (NMR). We have investigated BEC in $RbMnF_3$ with cubic anisotropy and $MnCO_3$ with easy plain anisotropy. Both crystals are characterized by a very non-linear NMR with the energy potential which supports the formation of BEC of magnons. Owing a relatively small relaxation at the temperature of about 1K we have succeeded to create the BEC states of high density. The new results of magnon BEC under these conditions will be demonstrated.

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