

Spin Dynamics of Frustrated Honeycomb Lattice Antiferromagnet

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Low dimensional spin systems have attracted much interest because the quantum fluctuation is strong due to the less coordination number than that of three dimensional system. The fluctuation of honeycomb lattice spin system is expected to be stronger than the square lattice because its coordination number 3 is smaller than 4 of the square lattice. In the case of $S=1/2$, $\text{InCu}_{2/3}\text{V}_{1/3}\text{O}_3$, we found that the anomalous spin dynamics below T_N is the peculiar feature of the honeycomb lattice antiferromagnet (HLAF) that is not observed in the square lattice antiferromagnet.¹ On the other hand, $\text{Bi}_3\text{Mn}_4\text{O}_{12}(\text{NO}_3)$, which is the model substance of $S=3/2$ HLAF, shows no long range order down to 0.4 K. Moreover, the field-induced magnetic ordering phase of $\text{Bi}_3\text{Mn}_4\text{O}_{12}(\text{NO}_3)$ is reported by the neutron measurements. The peculiar spin dynamics of honeycomb lattice antiferromagnets will be reported and discussed from results of the high-field ESR measurements in the temperature range from 1.8 K to 300 K.

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