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Magnetic-field and angular dependence of magnetism in the triangular Mott insulator κ -(BEDT-TTF) $_2$ Cu $_2$ (CN) $_3$ investigated by ^{13}C NMR KAZUYA MIYAGAWA, KENTARO UMEDA, K. INUI, KAZUAAHI KANODA, University of Tokyo — The organic conductors, κ -(BEDT-TTF) $_2$ X, are prototype for investigating Mott physics and spin frustrations. The X=Cu[N(CN) $_2$]Cl is a Mott insulator which undergoes an antiferromagnetic phase transition. On the other hand, title compound which has a triangular lattice does not show a long range magnetic ordering. This suppression is believed to deeply relate to strong spin frustrations. While X=Cu $_2$ (CN) $_3$ does not show magnetic ordering, we previously reported anomalous behaviors in ^{13}C NMR around 6 K, where heat capacity, thermal conductivity and lattice constant show anomalies as well. So, the 6 K anomaly is a key phenomenon for understanding the origin of absence of magnetic order. We have measured external-field angular dependence of ^{13}C NMR under magnetic fields up to 15 T for clarifying the origins of the line broadening and the $1/T_1$ anomaly around 6K. At room temperature, angular dependence of spectra is well explained by a crystal structure. We will show the detailed experimental results and discuss the low temperature states.

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