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Temperature Dependence of ^{7}Li NMR Spectra in a $Li_2KRb(SO_4)_2$ Single Crystal MOOHEE LEE, HO HYOUN KIM, KIHYEOK KANG, JUNG SEOK SIM, Department of Physics, Konkuk University, Seoul 143-701, South Korea, AE RAN LIM, Department of Science Education, Jeonju University, Jeonju 560-759, South Korea — $Li_2KRb(SO_4)_2$ is a mixed crystal of $LiKSO_4$and $LiRbSO_4$. $LiKSO_4$ has a hexagonal symmetry at room temperature and undergoes four phase transitions at low temperature. On the other hand, $LiRbSO_4$ is pare-electric with a monoclinic symmetry at room temperature and then shows a phase transition above 400 K. In order to understand the microscopic details of structural phase transitions in the single crystal of $Li_2KRb(SO_4)_2$, we have measured the temperature dependence of ^{7}Li NMR spectrum at 8 T from 300 K down to 100 K. The ^{7}Li NMR spectrum shows three resonance peaks, which is a typical shape from three nuclear Zeeman level splitting for the nuclear spin of I=3/2 with nuclear-quadruple interaction. The spectrum shows a different shape for 8T parallel and perpendicular to the c-axis. As temperature decreases, the spectrum shows no significant change whereas the ^{7}Li nuclear quadrupole frequency increases monotonically.

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