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NMR study of new ruthenates with high magnetic ordering P.L. PAULOSE, TANMOY CHAKRABARTY, Tata Institute of Fundamental Research, Mumbai, India — The Ru based compounds, Ca_3LiRuO_6 and Ca_3NaRuO_6 show unusually high magnetic ordering temperature. Extended super exchange model is invoked to explain the magnetic behavior in the isostructural compound Ca_3LiOsO_6. We have carried out NMR investigation on these two Ru-based compounds. Ca_3LiRuO_6 is a weak ferromagnet with a magnetic ordering temperature (T_C) of 115 K which is explored by the temperature dependence of ^{7}Li NMR line shift, line-width and spin-lattice relaxation rate ($1/T_1$). Above T_C, a broad maximum is observed in the evolution of line-width of the spectra. We speculate that this feature might be attributed to some low-dimensional magnetic behavior. Contrastingly, Ca_3NaRuO_6 with similar structure and local geometry of the Ru^{5+} ions is a conventional antiferromagnet with a transition temperature of 90 K. The temperature dependence of ^{23}Na NMR line shift and $1/T_1$ is studied across magnetic transition in Ca_3NaRuO_6. The temperature variation of line-width is found to be different compared to Ca_3LiRuO_6. In both these systems, $1/T_1$ decreases significantly below ordering temperature, characteristic of many antiferromagnetic systems.

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