

## Magnetism of A-site ordered perovskite manganites $R\text{BaMn}_2\text{O}_6$ ( $R = \text{La}$ and $\text{Y}$ )

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The A-site ordered perovskite manganites  $R\text{BaMn}_2\text{O}_6$  ( $R = \text{Y}$  and rare earth elements) have been attracting much attention due to their novel structural and electromagnetic properties.  $\text{YBaMn}_2\text{O}_6$  shows three successive phase transitions; structural and orbital at 520 K, charge at  $T_{\text{co}} = 480$  K, and AF orders at  $T_{\text{N}} = 195$  K. Since its remarkable features, very high  $T_{\text{co}}$  and new pattern of charge and spin order, may be closely related to the peculiar structure to the A-site ordered perovskites,  $\text{YBaMn}_2\text{O}_6$  is a suitable system to investigate the characteristic of the A-site ordered manganites. In ZF- $\mu\text{SR}$  time spectra below  $T_{\text{N}}$ , we observed spontaneous muon oscillation that consists of three components with different frequencies. We discuss its magnetic properties and possible muon site on the basis of previously reported spin structure. We also present  $\mu\text{SR}$  results of ferromagnet  $\text{LaBaMn}_2\text{O}_6$  ( $T_{\text{c}} = 320$  K) showing a cross-over-like transition from a ferromagnetic metal phase to a charge ordered one at low temperature.

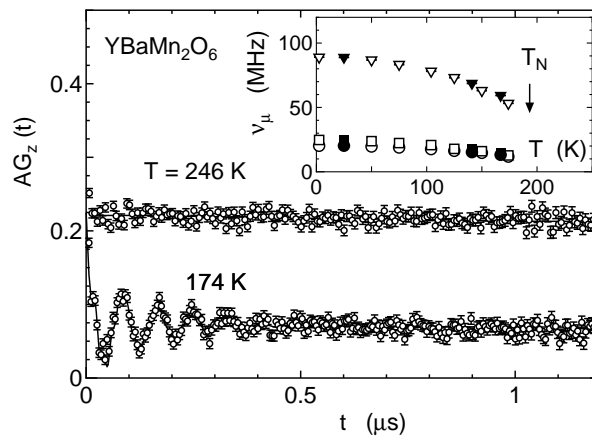


Fig. 1: ZF- $\mu\text{SR}$  time spectra of  $\text{YBaMn}_2\text{O}_6$ . Inset: Temperature dependence of the observed three spontaneous frequencies in the AF state.