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Magnetic ground state of $\text{YbCo}_2\text{Zn}_{20}$ probed by muon spin relaxation

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In intermetallic Ce- and Yb-compounds, the hybridization between the $4f$ and itinerant conduction electrons induces the magnetic instability and charge configurations, and the ground state properties of heavy fermion located in the vicinity of a magnetic quantum critical point (QCP) is one of important issue for strongly correlated electron systems. The cubic compound $\text{YbCo}_2\text{Zn}_{20}$ has huge electronic specific heat coefficient $\gamma=7900\text{mJ/molK}^2$ [2] and its ground state could be located in the vicinity of the QCP or a long-range ordered phase. Indeed, a magnetic long-range order was observed under pressure above 1-2 GPa[2]. To investigate magnetic ground state, we have carried out muon spin relaxation measurements and confirm non-magnetic ground state with fluctuating tiny magnetic moment. Detail of the magnetic state will be reported in the presentation.

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