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Neutron Scattering Study on a $S=1/2$ Quasi-two-dimensional Magnet $(\text{CuCl})\text{LaNb}_2\text{O}_7$ NORIAKI OBA, TARO KITANO, HIROSHI KAGEYAMA, Graduate School of Science, Kyoto University, MASAKAZU NISHI, KAZUMA HIROTA, SATOSHI NAGAI, Neutron Science Laboratory, ISSP, University of Tokyo, LILIANA VICIU, JHON B. WILEY, Department of Chemistry and Advanced Materials Research Institute, University of New Orleans, JUN YASUDA, YOICHI BABA, YOSHITAMI AJIRO, KAZUYOSHI YOSHIMURA, Graduate School of Science, Kyoto University — Magnetic properties of polycrystalline $(\text{CuCl})\text{LaNb}_2\text{O}_7$ were studied by magnetic susceptibility and neutron scattering measurements. Magnetic susceptibility exhibits a broad maximum around 16 K, followed by a rapid decrease with decreasing temperature. Powder neutron diffraction measurement provides no evidence of magnetic ordering down to 1.5 K. Furthermore inelastic neutron scattering measurement shows magnetic excitation at around 2.1 meV. These experimental results suggest that this compound has a spin-singlet ground state which is separated from the excited state with a finite-energy gap.

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