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Structure of ^{17}B studied by the inelastic scattering on proton M. SHINOHARA, T. NAKAMURA, Y. SATOU, Y. KONDO, T. SUGIMOTO, N. MATSUI, T. OKUMURA, Y. HASHIMOTO, T. NAKABAYASHI, Tokyo Tech, T. KOBAYASHI, H. OTSU, Y. MATSUDA, N. ENDO, M. KITAYAMA, Tohoku Univ., H. SAKURAI, T. ONISHI, H.J. ONG, Univ. of Tokyo, S. SHIMOURA, M. TAMAKI, CNS, Y. TOGANO, S. KAWAI, Rikkyo Univ., RIPS COLLABORATION — The structure of the neutron-rich isotope ^{17}B has been investigated using the ^{17}B+p inelastic scattering at approximately 60 MeV/nucleon. We focus on extracting the deformation parameters independently for protons and neutrons for ^{17}B by using the transition to the first excited state at 1.07(1) MeV. The phenomenon of different shapes in proton and neutron distributions was suggested for the neighboring nucleus ^{16}C. A comparison of the inelastic cross section of the current proton target with the one obtained in the previous ^{17}B+C experiment makes it possible to determine independently proton and neutron deformations. The experiment was performed using the RIPS beam line at RIKEN. A ^{17}B beam delivered from the RIPS bombarded a liquid hydrogen target. The γ rays emitted from the first excited state of ^{17}B were detected by forty-eight NaI(Tl) scintillators. We have obtained the cross section and the angular distribution for the transition to the first excited state. We compare the present result with the one with the carbon target.

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