

Abstract Submitted  
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**The Structure of Neutron-rich  $^{28,29}\text{Mg}$  Studied through  $\beta$ -decay of Spin-polarized  $^{28,29}\text{Na}$  Beams at TRIUMF** K. TAJIRI, K. KURA, M. KAZATO, M. SUGA, A. TAKASHIMA, T. HORI, T. MASUE, T. SUZUKI, T. FUKUCHI, A. ODAHARA, T. SHIMODA, Osaka University, Y. HIRAYAMA, N. IMAI, H. MIYATAKE, KEK, M. PEARSON, C.D.P. LEVY, K.P. JACKSON, TRIUMF — The structure of neutron-rich Mg isotopes in the region of Island of Inversion has been attracting much attention because of vanishing of  $N=20$  magic number and their large deformation in the ground states. However, most of the spins and parities of the excited states in Mg isotopes with  $A \geq 29$  are left unknown. We have started systematic  $\beta$ -decay studies at TRIUMF, Canada, where highly spin-polarized radioactive Na beams are available. The experiment to determine the spins and parities of the states in  $^{28,29}\text{Mg}$  by using spin-polarized  $^{28,29}\text{Na}$  beams were performed at Osaka beam line in TRIUMF. The results are as follows: Many  $\gamma$ -transitions and energy levels were newly found in  $^{28,29}\text{Mg}$ . In  $^{28}\text{Mg}$ , spins and parities of the 4 levels reported previously were reconfirmed and those of the newly found 7.461 MeV level was assigned to be  $2^+$ . In  $^{29}\text{Mg}$ , spins and parities of 3 energy levels were assigned for the first time. Shell model calculations were performed with NuShell code by using USD, USDA and USDB interactions to compare with the experimental results. In  $^{29}\text{Mg}$ , we also compared with MCSM calculation. The level structure in  $^{28}\text{Mg}$  was well explained by only sd-shell configurations.

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