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Measurement of the Two-Halo Neutron Transfer Reaction 11Li(p,t)9Li at 62.4 MeV

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We report the measurement of differential cross section of the 11Li(p,t)9Li reaction performed at TRIUMF. Previous investigation of the reaction was reported at lower energy of 3A MeV [1]. Present data were taken at higher energy where the direct reaction mechanism is expected to be more dominant. It will be shown that the present measurement shows the transition to a higher excited state than the previous report.
We used the ISAC-II facility to accelerate 11Li to 62.4 MeV and the IRIS facility was used for measuring the 11Li(p,t) reaction. This experimental data were simultaneously taken with the published experiment of (p,p')[2].
The transition to the second excited state of 9Li was observed for the first time. The presentation will describe the experiment and analysis.
[1] I. Tanihata et al., Phys. Rev. Lett. 100, 192502 (2008).
[2] J. Tanaka et al., Phys. Lett B 774, 268 (2017)

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