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## Search for beta-delayed proton emission from $^{11}\text{Be}$

Even though  $\beta$ -delayed proton emission is a phenomenon which typically occurs for neutron-deficient nuclei, the energy window for this process is also open in a few light, neutron-rich isotopes. Particularly interesting in this respect is  $^{11}\text{Be}$ , which is also a one-neutron halo nucleus [1]. Several channels for  $\beta$ -delayed particle emission from this isotope are open, including the proton branch, with  $Q_p \sim 280$  keV. The branching ratio (BR) for the latter process is important for the determination of the Gamow-Teller strength at high excitation energy and for testing models that predict a direct relation between  $\beta p$  emission and the halo structure. Indirect observations based on accelerator mass spectrometry (AMS) resulted in conflicting values for this branching ratio [2, 3]. The direct measurement of the  $\beta p$  BR and energy spectrum was reported recently in Ref. [4] but the results disagree with the most recent finding of Ref. [3].

We carried out an experiment to search for  $\beta$ -delayed protons from  $^{11}\text{Be}$ , using the Warsaw Optical Time Projection Chamber. The measurement was performed at HIE-ISOLDE facility in CERN, where a large amount of  $^{11}\text{Be}$  ions was implanted into the OTPC detector. The final results of this experiment will be presented and discussed [5].

- [1] M. J. G. Borge, et al. J. Phys. G, 40, 035109 (2013).
- [2] K. Riisager et al., Phys. Lett. B 732, 305 (2014).
- [3] K. Riisager et al., Eur. Phys. J. A 56, 100 (2020).
- [4] A. Ayyad et al., Phys. Rev. Lett. 13, 082501 (2019)
- [5] N. Sokołowska et al. Phys. Rev. C 110, 034328 (2024).

### Notes

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