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Preliminary beam experiment results of single bunch selection at RAON facility

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To enable neutron time-of-flight (TOF) experiments at the RAON heavy-ion accelerator facility, we tested a single bunch beam selection method by combining a fast chopper and double gap buncher in the low-energy beam transport (LEBT) section. The fast chopper converts a CW beam into hundreds of nanoseconds pulsed beam. Then, the double gap buncher performs bunching to shorten the pulse length to less than one radio frequency quadrupole (RFQ) cycle. Ideally, a single isolated bunch can be achieved after the RFQ. In this study, we discuss design of single bunch selection system and preliminary beam experiment results.

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