

# Development of an active target TPC for studying alpha cluster structure in $^{12}\text{C}$ and $^{16}\text{O}$

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We aim to investigate alpha-clusters in alpha-conjugate nuclei, such as  $^{12}\text{C}$  and  $^{16}\text{O}$ , using the Active-Target Time Projection Chamber (AT-TPC). Performance test of prototype AT-TPCs were conducted using a 200 MeV/u carbon beam at the Heavy Ion Medical Accelerator in Chiba (HIMAC). The results from this test provide valuable insights for the development and optimization of the Sejong TPC-Drum, which will be utilized in the Large Acceptance Multi-Purpose Spectrometer (LAMPS) experiment for low-energy studies at RAON. In this presentation, we report on the performance results of the prototype AT-TPCs and the current status of the Sejong TPC-Drum.

## Research field of your presentation

Experimental Low-energy nuclear physics

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