

## Contribution submission to the conference Darmstadt 2016

**Performance of the Cluster-Jet Target for  $\bar{P}$ ANDA** — ●ANN-KATRIN HERGEMÖLLER, DANIEL BONAVENTURA, SILKE GRIESER, BENJAMIN HETZ, ESPERANZA KÖHLER, and ALFONS KHOUKAZ — Institut für Kernphysik, Westfälische Wilhelms-Universität Münster, 48149 Münster, Germany

The success of storage ring experiments strongly depends on the choice of the target. For this purpose, a very appropriate internal target for such an experiment is a cluster-jet target, which will be the first operated target at the  $\bar{P}$ ANDA experiment at FAIR. In this kind of target the cluster beam itself is formed due to the expansion of pre-cooled gases within a Laval nozzle and is prepared afterwards via two orifices, the skimmer and the collimator. The target prototype, operating successfully for years at the University of Münster, provides routinely target thicknesses of more than  $2 \times 10^{15} \frac{\text{atoms}}{\text{cm}^2}$  in a distance of 2,1 m behind the nozzle. Based on the results of the performance of the cluster target prototype the final cluster-jet target source was designed and set into operation in Münster as well. Besides the monitoring of the cluster beam itself and the thickness with two different monitoring systems at this target, investigations on the cluster mass via Mie scattering will be performed. In this presentation an overview of the cluster target design, its performance and the Mie scattering method will be presented and discussed. Supported by BMBF, HGS HIRe and GSI F+E.

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