

Analysis of the energy loss in gaseous media: commissioning of the Active Target for SPES

After a brief introduction to the physics case and a general view on the principle of operation of active targets, the results from the analysis of the specific energy loss profiles of some ions from ${}^6\text{Li}$ to ${}^{50}\text{Ti}$ in three gaseous media, CF_4 , iC_4H_{10} , P10 mixture (Ar, 90% + CH_4) will be outlined.

Data were acquired during the commissioning of the Active Target for SPES at Laboratori Nazionali del Sud (Catania, Italy) in the period 3rd – 21st of December 2018.

The method used to check the stability of the system will be shown and the energy calibration of the detector employed for this analysis will be presented.

The analysis the energy loss of ions in iC_4H_{10} and P10 is still ongoing. Some cases regarding the CF_4 will be described in details and they will be compared to the simulation obtained with TRIM (TRAnspor of Ion in Matter), a software package commonly used to calculate the specific energy loss in media.