Contribution ID: **142** Type: **Oral**

Inverse thick target method in order to investigate alpha-clustering in 212Po

Thursday, 16 May 2019 17:50 (20 minutes)

In order to investigate 212Po alpha-structure, the inverse kinematic thick target method has been used to study elastic and inelastic scattering of 208Pb on 4He target. A 208Pb beam produced by the Superconducting Cyclotron (CS), INFN-LNS, at the incident energy of 10 MeV/u was sent onto a 4He gas cell. The gas cell was acting as target and as beam degrader, completely stopping the beam before it reaches the detection system placed at 0° with respect to the beam direction.
The recoiling alpha-particles were measured at forward angles in the center-of-mass system. The 208Pb stopping power in 4He was measured to correctly determine the excitation energy Ex from the detected alpha energy.
In this talk, the experimental technique will be described and the preliminary data analysis of the stopping power and the elastic cross section will be shown.

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Session Classification: Session XX (Parallel Session)