



Contribution ID: 161

Type: Poster

Investigation of reaction channels in the production of alpha particles in light systems collisions

Monday, 20 September 2021 15:45 (2 hours)

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A study of the mechanisms involved in the production of alpha particles from reactions induced by a ^6He radioactive beam on a ^9Be light target, is presented. The experimental data was obtained using the RIBRAS (Radioactive Ion Beams in Brasil) facility of the Institute of Physics of the University of Sao Paulo, Brazil [1, 2]. The RIBRAS system consists of two superconducting solenoids used to select and focus light secondary beams of nuclei far from the stability line. A high yield of α -particles has been observed in the measurement performed for the $^6\text{He}+^9\text{Be}$ system [3], which was not present with the gold target, used for normalization purposes. In the present work, the energy and the angular distributions of those events have been analysed. The results will be compared with theoretical calculations performed using the Ichimura-Austern-Vincent (IAV) formalism, a new model recently applied to study inclusive reactions [4,5].

References

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Session Classification: Poster Session 1

Track Classification: Nuclear Structure, Reactions and Dynamics