



Contribution ID: 27

Type: Oral

New evidence for α -clustering in ^{212}Po

Tuesday, 18 July 2023 16:40 (15 minutes)

^{212}Po has two protons and neutrons outside the doubly-magic nucleus ^{208}Pb and it may be assumed that the nuclear structure can be well described within the shell model. But various experimental properties, such as the short-lived ground state, are better described by an α -clustering model. The $B(E2)$ values of the decays of low-lying yrast states are an important fingerprint to describe the structure of ^{212}Po . Especially the missing $B(E2; 4_1^+ \rightarrow 2_1^+)$ value is important in this discussion. We have performed an α -transfer experiment to investigate excited states of ^{212}Po and determine the lifetimes using the ROSPHERE γ -ray detector array at IFIN-HH in Magurele, Romania. This array consisted of 15 HPGe detectors and 10 $\text{LaBr}_3(\text{Ce})$ scintillator detectors and was supplemented with the SORCERER particle-detector array. The combination of γ -ray and the particle detectors was an important tool to determining the mean lifetimes of all ground-state band levels up to the 8^+ state by applying the fast-timing method. I will present our lifetime analysis and discuss the results within the shell model and α -clustering models. Supported by BMBF under Verbundprojekt 05P2021 (ErUM-FSP T07) via grant 05P21RDFN1

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Session Classification: Session 7A

Track Classification: Experimental Nuclear Structure