

Multiparticle-multihole state mixing in ^{46}Ca ?

Monday, 2 October 2023 16:50 (20 minutes)

The aim of this letter of intent is to study the structure of ^{46}Ca via the lifetime measurements of the low-lying excited states. Particularly, the lifetime of 2_{-1}^{+} , 4_{-1}^{+} and 0_{-2}^{+} states will represent a crucial result to investigate the structure of the competing low-lying configurations, shedding light on the phenomenon of shape coexistence, already established in other Ca isotopes. In order to measure the lifetimes of the low-lying states in ^{46}Ca , a multi-nucleon transfer (MNT) reaction between neutron-rich projectile and target will be performed. Such a technique allows us to directly populate the excited states of the channels, overcoming experimental limitations caused by the presence of low-lying isomers.

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Session Classification: LoI 1