

eurorib'10

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Study of exotic beta-decays of light nuclei with an implantation technique

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Thanks to its well-established theory, beta-decay is a useful tool to study the peculiar features present in light exotic nuclei, such as halos and cluster structures. In such systems, beta decay is characterised by large Q -values and low breakup thresholds in the daughter nuclei, so that feeding to continuum states and delayed emission of nucleons and light ions become possible. To study these exotic decays we used a technique where the radioactive nuclei are implanted in a finely segmented detector, and the decay channels are identified through the time and position correlation between the implanted nuclei and subsequent parent and daughter decays. This method ensures a high efficiency and an accurate normalisation of the branching ratios. We will illustrate the results obtained for the study of various systems: The deuteron-emission decay channel of the nuclei ^6He and ^{11}Li , and the implications concerning their halo structure; The decays of ^{12}B and ^{12}N to alpha-unbound channels in ^{12}C ; The measurements of the decay of ^8B and ^{11}Be .

Is this an invited talk? (please answer yes or no)

no

Would you prefer your contribution to be a poster presentation? (please answer yes or no)

no

Would you prefer your contribution to be an oral presentation? (please answer yes or no)

yes

Are you a student, postdoc or an attendee from an “emerging” country and would like to apply for financial support?

no

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