Contribution ID : **3** Type : **not specified**

Beta-delayed proton-emission, exotic decays in light nuclei

Monday, 21 February 2011 09:50 (40)

The beta decay process allows for understanding the interactions and behaviour of the nucleons inside the nucleus. The process is well understood and the interpretation of the data yields a wide variety of spectroscopic information: level energies, spins, parities, widths and level densities.

Often the key nuclei to understand how such a complex system can be constructed from a few ingredients are very neutron or very proton rich. Such exotic systems allow isolating and amplifying specific aspects of the nucleonic interactions, and uniquely display the physics of loosely bound systems governed by the strong interaction. Beta decay can also shed light on some fundamentals of the weak interaction, which it is the main contributor to the process.

Going far from stability the difference in isobaric masses increases quadratically and the binding energy of the last nucleon decreases dramatically, the beta-delayed particle emission becomes dominant near the drip lines. The beta transitions feed unbound excited states and they are followed by delayed particle emission. The high efficiency for the charged particle detection makes the study of the beta delayed particles a unique tool to understand the nuclear structure of very rare species through very exotic decay modes.

In this contribution recent achievements in particle decay studies will be presented. The different techniques developed to do high quality spectroscopy of very low produced exotic nuclei, will be revised.

Summary

Co-author(s) : G. BORGE, Maria José (Instituto de Estructura de la Materia, CSIC)

Presenter(s) : G. BORGE, Maria José (Instituto de Estructura de la Materia, CSIC)

Session Classification : Monday February 21st, 2011. 9:00 - 10:30