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De-excitations of residual nuclei based on the TALYS and GEMINI++ codes

Friday, 21 June 2024 17:30 (2 hours)

We explore the de-excitation of highly excited $^{11}B^*$ by use of the TALYS and GEMINI++ codes, which can deal with the decay of a compound nucleus by a series of sequential binary decays. For a liquid scintillator detector, the residual nucleus $^{11}B^*$ can be produced by neutrino interactions with ^{12}C or proton decays in ^{12}C. We use both the TALYS and GEMINI++ codes to estimate the de-excitation branching ratios of $^{11}B^*$ for a given excitation energy spectrum. It is found that the TALYS calculation can partly account for the current experimental results. Note that the preliminary result from GEMINI++ can give a better agreement with the experimental data.

Poster prize

No

Given name

Wanlei

Surname

Guo

First affiliation

Institute of High Energy Physics, Chinese Academy of Sciences

Second affiliation

Institutional email

guowl@ihep.ac.cn

Gender

Male

Collaboration (if any)

Primary author: GUO, Wanlei (Institute of High Energy Physics, Chinese Academy of Sciences)

Co-author: Dr NIU, Yujie (Institute of High Energy Physics, Chinese Academy of Sciences)

Presenter: GUO, Wanlei (Institute of High Energy Physics, Chinese Academy of Sciences)

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