



Contribution ID: 165

Type: Oral

Gamow-Teller transitions in the ^{46}Ti ($^3\text{He}, \text{t}$) ^{46}V reaction

Monday, 31 August 2015 15:00 (15 minutes)

Gamow-teller is a weak interaction of spin-isospin type. By studying GT transitions we can obtain some information about nuclear structure as well as nuclear astrophysics. GT transitions can be studied by beta decay and charge exchange reactions. β decay has a direct access to the absolute GT transition strengths $B(\text{GT})$. Charge Exchange reactions are also useful to determine $B(\text{GT})$ strengths up to high excitation energies if the “standart $B(\text{GT})$ value” is available from beta-decay studies. Here in this talk we focus on high-resolution ($^3\text{He}, \text{t}$) type charge exchange reaction studies at RCNP, Osaka. A specific example on the ^{46}Ti target nucleus will be given. The spectrum which have high energy resolution of ~30.25 keV makes it possible to observe many excited states and determine the Gamow-Teller transition strengths in ^{46}V .

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Session Classification: Nuclear Structure, Spectroscopy, and Dynamics I