



ID de Contribution: 23

Type: Oral Presentation

## (d, 3He) transfer reactions with Be-Li isotopes near the drip-line

*lundi 25 septembre 2023 12:25 (20 minutes)*

Proton-removal reactions along the Be-Li chain close to the drip-line have been investigated with the aim of establishing the role of the Geometrical Mismatch Factor (GMF) and NN effects [1] in lowering the cross sections, as observed previously in He-Li nuclei [2].

The experiment was performed at GANIL using  $^{10}\text{Be}$  and  $^{12}\text{Be}$  beams at 30 AMeV impinging a  $\text{CD}_2$  target, with an intensity of  $3 \cdot 10^5$  pps and  $2 \cdot 10^4$  pps respectively. The angle and energy of the light recoil were detected by using 8 MUST2 telescopes [3], and a zero-degree detector consisting of an ionization chamber and a plastic scintillator that permitted the identification of the heavy recoil.

The missing-mass technique was used to reconstruct the excitation energy spectrum, from which cross sections can be extracted. Particular attention has been paid to the  $^{12}\text{Be}(d, ^3\text{He})^{11}\text{Li}$  transfer reaction, but also to the  $^{12}\text{Be}(d, t)^{11}\text{Be}$  channel as it enables a further constrain to the GMF of  $^{12}\text{Be}$  [4].

Preliminary results of the excitation energy for  $^{11}\text{Li}$  and  $^{11}\text{Be}$  will be presented and an overview of the status of the analysis for  $^{10}\text{Be}$  reactions will be depicted

### References

- [1] N. K. Timofeyuk, J. Phys. G Nucl. Partic. 41, 094008 (2014).
- [2] A. Matta et al., Phys. Rev. C 92, 041302 (2015).
- [3] E. Pollacco et al., Eur. Phys. J. A 25, 287–288 (2005).
- [4] F. Nunes et al., Nucl. Phys. A 609, 43–73 (1996)

**Auteurs principaux:** ACHOURI, Lynda (LPC Caen); ASSIÉ, Marlène (IPNO); BASTIN, Beyhan (GANIL); BEAUMEL, Didier (IPN Orsay); BLUMENFELD, Yorick (IPNO); Prof. CATFORD, Wilton (University of Surrey); CORSI, ANNA (CEA Saclay); DE OLIVEIRA, François (GANIL); DE SÉRÉVILLE, Nicolas (IPN Orsay); M. DELAUNAY, Benoit (CC-IN2P3/CNRS); DELAUNAY, Franck (LPC Caen); FERNANDEZ DOMINGUEZ, Beatriz (USC); FLAVIGNY, Freddy (LPC Caen); FRANCHOO, serge (ipn); GEORGIADOU, Anastasia (IJCLab); GIBELIN, Julien (LPC CAEN/Université de Caen); GIRARD-ALCINDOR, Valérian (GANIL); HAMMACHE, Faïrouz (IPN-Orsay); Dr JACQUOT, bertrand (CNRS); KAMALOU, O (GANIL); M. KOYAMA, Shumpei (the University of Tokyo); LAPOUX, Valérie (CEA Saclay DPhN); LEMASSON, Antoine (GANIL); LOIS-FUENTES, Juan (IGFAE/USC); LOTAY, Gavin; LOZANO GONZÁLEZ, Miguel (IGFAE-USC); MARQUES, Miguel (LPC-Caen); Dr MATTA, Adrien (LPC Caen, CNRS-IN2P3); MEYER, Anne (Université Paris-Saclay - IJCLab); ORR, Nigel (LPC-Caen); REJMUND, Maurycy (GANIL); REJMUND, Maurycy (GANIL); ROGER, Thomas (GANIL); SORLIN, Olivier (GANIL); Dr STEFAN, Iulian (IJCLab); STODEL, Christelle (GANIL); SUZUKI, Daisuke (RIKEN Nishina Center); THOMAS, Jean-Charles (Grand Accélérateur National d'Ions Lourds); TIMOFEYUK, Natalia; VANDEBROUCK, Marine (CEA Saclay DPhN)

**Orateur:** LOZANO GONZÁLEZ, Miguel (IGFAE-USC)

**Classification de Session:** Nuclei at the drip lines

**Classification de thématique:** Nuclear Structure