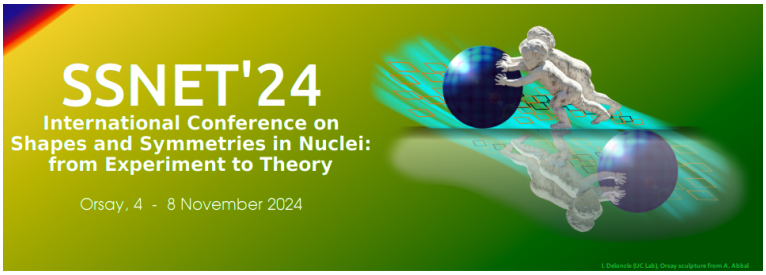

ID de Contribution: **49** Type: **Non spécifié**

Absolute electromagnetic transition rates in semi-magic N = 50 isotones as a test for (pi g9/2)n single particle calculations.

mardi 5 novembre 2024 09:10 (20 minutes)

Single-j calculations for (□)□ configurations with n = 3,..,2j+1 can be performed using a semi-empirical approach, provided that the energies and absolute electromagnetic transition rates are known for the two-particle (hole) nucleus. This approach was already successfully applied in the case of protons in the (□*h*9/2)3 nucleus 211□□ [1]. At the Cologne Tandem Accelerator of the Institute for Nuclear Physics we have tested these relations by measuring lifetimes of excited states in the (□□9/2)□ isotones with N = 50. We started the studies in the two proton nucleus 92□□ where the previously unknown B(E2:4+1 ⟶ 2+1) value, was measured with high precision using the electronic □ –□ fast timing technique [2]. Subsequently we applied the same technique in 93□□ and 94□□ [3].
Work supported by DFG Grant JO391/18-2.
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Fransen, A. Pfeil, J.-M. Regis, P. Van Isacker, Phys. Rev. C 108 (2023).
[3] M. Ley, J. Jolie, A. Blazhev, L. Knafla, A. Esmayalzadeh, C. Fransen, A Pfeil, J.M. Régis, P. Van Isacker et al., submitted to Phys. Rev. C.

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Classification de Session: Session 5