Contribution ID : **524** Type : **not specified**

Study of deformed two-body weakly bound nuclei in the strong-coupling and application to reactions

Tuesday, 22 March 2022 10:15 (15)

Abstract

The structure of two exotic weakly bound nuclei (17C and 11Be) is studied with a 2-body model: a weakly bound neutron and the core. The core is considered to have a permanent quadrupole deformation and a single collective rotational degree of freedom, while the neutron moves under the deformed potential created by the core.

By diagonalizing the Hamiltonian on the basis of the transformed harmonic oscillator (THO), the wave functions and energies for the bound states and some resonances are obtained. The low-lying structure obtained for 17C and 11Be is tested by performing stripping and pick-up reactions, respectively. Good agreement is found by comparing with the experimental data from [Chin. Phys. Lett. 35 (2018) 082501] and [Phys. Lett. B 811 (2020) 135939].

Primary author(s) : PUNTA DE LA HERRÁN, Pedro (Universidad de Sevilla)

Co-author(s) : LAY VALERA, José Antonio (Universidad de Sevilla); MORO, Antonio (Universidad de Sevilla)

Presenter(s) : PUNTA DE LA HERRÁN, Pedro (Universidad de Sevilla)

Session Classification : Red FNUC (Red Temática de Física Nuclear)

Track Classification : Red Temática de Física Nuclear (FNUC)