

# **$T = 1$ pairing and Number-Projection Effects on the Spectroscopic Factor of One-Proton Stripping Reactions within the Picket-Fence Model**

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The neutron-proton (np) pairing effects of isovector ( $T = 1$ ) type on the spectroscopic factor (SF) of one-proton stripping reactions are studied within the generalized BCS approach [1]. As the main shortcoming of this approach is the non-conservation of the particle-number, a number-projection is necessary. In the present contribution, we use the Sharp-BCS (SBCS) method [2] which has been generalized to the  $T = 1$  pairing [3] and has been recently used to study the SF of one pair of like-particles transfer reactions [4, 5]. As a first step, new expressions of the SF are derived in the case where the model nuclei is odd, either before or after the projection. Two kinds of reactions are considered, i.e., when the parent nucleus is such as  $Z$  odd and then such as  $Z$  even. As a second step, calculations are performed using the picket-fence model [6]. Systems such as  $N \simeq Z$ , in which the np pairing effects are supposed to be maximal, are considered. The  $T = 1$  pairing and number-projection effects on the SF are studied as a function of the np pairing gap parameter of the initial state  $\Delta_{np}^i$ . It is shown that both effects are important. Moreover, as it should be foreseeable, the behavior of these effects as a function of  $\Delta_{np}^i$  is very different depending whether  $Z$  is odd or even.

## **References**

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