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Spectroscopic Factors in the Islands of Inversion à la Nilsson *

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Guided by the formalism developed for studies of single-nucleon transfer reactions in deformed nuclei [1], we have analyzed spectroscopic factors data in the Islands of Inversion at N=8 and 20, in the rotational strong-coupling limit.

Based on the fact that intruder deformed configurations dominate the low-lying structure of nuclei within the Islands of Inversion, the Nilsson formalism provides an intuitive and simple approach to obtain important structure information from direct reactions, and a complementary view to shell model calculations.

We will present results for 10,11,12Be and 32,33Mg [2,3], showing good agreement with the experimental data, and discuss some predictions for other regions.

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[1] B. Elbek and P. Tjom, Advances in Nucl. Phys. Vol 3, 259 (1969).
[2] A. O. Macchiavelli, et al. Phys. Rev. C97, 011302 (R) (2018).
[3] A. O. Macchiavelli, et al. Phys. Rev. C96, 054302 (2018).

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