

# Results from Transfer Experiments in the Island of Inversion

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Thirty years after the discovery of the “island of inversion” [1] the borders of the island are still not well determined and in particular the evolution of the single-particle structure is not well investigated.

Transfer reactions yield important spectroscopic information, i.e. spin and parity assignments as well as spectroscopic factors, complementary to the information obtained in Coulomb excitation [2]. Since the transferred nucleon can occupy excited states, the properties of these states can be studied as well.

In order to study transfer reactions in inverse kinematics at REX-ISOLDE with MINIBALL a new setup was built covering a large solid angle. This new setup overcomes the limitations of previous transfer experiments performed at REX-ISOLDE [3].

In the first experiment the nucleus  $^{31}\text{Mg}$  which is right on the edge of the “island of inversion” was studied via the  $d(^{30}\text{Mg}, ^{31}\text{Mg})p$  reaction.

Preliminary results of this beam time which took place last year will be shown as well as future plans for transfer experiments at REX-ISOLDE.

[1] C. Thibault et al., Phys. Rev. C 12, 644 (1975)

[2] O. Niedermaier et al., Phys. Rev. Lett. 94, 172501 (2005)

[3] M. Pantea, PhD Thesis, TU Darmstadt, Germany (2005)

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