Contribution ID: **13** Type: **not specified**

Results from Transfer Experiments in the Island of Inversion

Wednesday 19 November 2008 15:25 (20 minutes)

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 transfered 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}Mg which is right on the edge of the "island of inversion" was studied via the d(^{30}Mg, ^{31}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)

*supported by BMBF 06MT238, DFG Cluster of Excellence "Origin of the Universe" and the EU through RII3-EURONS (contract no. 506065).

Author: Mr BILDSTEIN, Vinzenz (Physik-Department E12, TU München)

Co-authors: Ms WIMMER, Kathrin (Physik-Department E12, TU München); Prof. VAN DUPPEN, Piet (IKP, KU Leuven); Prof. KRÜCKEN, Reiner (Physik-Department E12, TU München); Dr GERNHÄUSER, Roman (Physik-Department E12, TU München); Dr KRÖLL, Thorsten (Physik-Department E12, TU München)

Presenter: Mr BILDSTEIN, Vinzenz (Physik-Department E12, TU München)

Session Classification: Spectroscopy