

Abstract Submitted  
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**Study of neutron-rich  $A \sim 30$  nuclei in multi-nucleon transfer reactions** MATHIS WIEDEKING, Lawrence Berkeley National Laboratory, P. FALLON, E. RODRIGUEZ-VIEITEZ, R.M. CLARK, M. CROMAZ, M. DESCOVICH, I-Y. LEE, M-A. DELEPLANQUE, A.O. MACCHIAVELLI, F.S. STEPHENS, D. WARD, Lawrence Berkeley National Laboratory, M.P. CARPENTER, Argonne National Laboratory, D. CLINE, R. TENG, C.Y. WU, University of Rochester — The structure of neutron-rich s-d-f shell nuclei in the mass  $A \sim 30$  region has been investigated through multi-nucleon transfer in the  $^{208}\text{Pb}(^{36}\text{S}, X\gamma)$  reaction at 230 MeV. Gamma-radiation from the reactions was detected using GAMMASPHERE [1]. Mass identification of the target-like and projectile-like products as well as an event-by-event Doppler-shift correction was possible by utilizing the excellent spatial and timing resolution of the heavy-ion counter CHICO [2]. The level schemes of several nuclei are significantly expanded. The measurements are compared to shell-model calculations to test the current understanding and to provide new information on the neutron-proton interaction in neutron-rich s-d-f shell nuclei. [1] I-Y Lee, Nucl. Phys. A520, 641c (1990). [2] M.W. Simon *et al.*, Nucl. Inst. Meth. Phys. A 452, 205 (2000).

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