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Two-proton knockout in neutron rich N=40 nuclei P. ADRICH, A.M. AMTHOR, D. BAZIN, M.D. BOWEN, C.M. CAMPBELL, J.M. COOK, A. GADE, D. GALAVIZ, T. GLASMACHER, S. MCDANIEL, D. MILLER, Y. SHIMBARA, K.P. SIWEK, J.R. TERRY, A. OBERTELI, D. WEISSHAAR, National Superconducting Cyclotron Laboratory at Michigan State University — Two-proton knockout from intermediate energy beams of neutron-rich nuclei impinging on light targets has been shown recently to be a direct reaction capable of producing neutron-rich residues and populating their excited states [1]. In an experiment carried out at the National Superconducting Cyclotron Laboratory at Michigan State University this reaction was used to produce and study in-beam γ -spectroscopy of excited states up to spin 6^+ in $N\sim 40$ isotopes of iron, $^{64,66,68}\text{Fe}$. So far, these are the heaviest nuclei produced by means of two-proton knockout. The study was motivated by the recently reported onset of deformation in $N\sim 40$ Cr and Fe isotopes below ^{68}Ni [2, 3]. In this contribution, the experimental technique, gamma spectra and inclusive one- and two-proton knockout cross sections will be presented and discussed.

(1) D. Bazin *et al.*, Phys. Rev. Lett. 91, 012501 (2003)

(2) M. Hannawald *et al.*, Phys. Rev. Lett. 82, 1391 (1999)

(3) O. Sorlin *et al.*, Eur. Phys. J. A 16, 55 (2003)

Prefer Oral Session

Prefer Poster Session

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