Abstract Submitted
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Inverse-kinematics proton scattering from ^{42,44}S, ^{41,43}P[1] L. A. RILEY, S. D. GREGORY, E. B. HALDEMAN, B. R. KLYBOR, M. A. LIGGETT, L. M. SKILES, Ursinus College, P.D. COTTLE, K. W. KEMPER, A. VOLYA, Florida State University, D. BAZIN, J. BELARGE[2], P. C. BENDER, B. A. BROWN, B. ELMAN, A. GADE, S. LIPSCHUTZ, B. LONGFELLOW, E. LUNDERBERG, T. MIJATOVIC, J. PEREIRA, R. TITUS, D. WEISSHAAR, J. C. ZAMORA, R. G. T. ZEGERS, NSCL, Michigan State University — Excited states of ^{42,44}S and ^{41,43}P have been studied via inverse-kinematics proton scattering from a liquid hydrogen target, using the GRETINA γ-ray tracking array. Proton-scattering deformation lengths of the 2_1^+ excitations in ^{42,44}S have been combined with electromagnetic deformation lengths to yield the ratio of neutron-to-proton matrix elements M_n/M_p. The status of the $N = 28$ major shell gap approaching ^{42}Si is discussed in light of the systematic behavior of M_n/M_p in even-even nuclei, and the ^{41,43}P(p, p') results are used to compare the SDPF-U and SDPF-MU shell-model interactions.

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[2]J. Belarge is currently a MIT Lincoln Laboratory employee. No Laboratory funding or resources were used to produce the results/findings reported in this presentation.

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