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Two Proton Knockout from ^{32}Mg P. FALLON, E. RODRIGUEZ-VIEITEZ, A.O. MACCHIAVELLI, R.M. CLARK, I-Y. LEE, M. WIEDEKING, Lawrence Berkeley National Laboratory, A. GADE, P. ADRICH, D. BAZIN, M. BOWEN, C.M. CAMPBELL, J.M. COOK, D.C. DINCA, T. GLASMACHER, S. MCDANIEL, W.F. MUELLER, A.F. RATIEWICZ, K. SIWEK, J.R. TERRY, D. WIESSHAAR, K. YONEDA, B.A. BROWN, NSCL, Michigan State University, T. OTSUKA, University of Tokyo, J.A. TOSTEVIN, University of Surrey, Y. UTSUNO, Japan Atomic Energy Research Institute — We present data and calculations on the near-dripline nucleus ^{30}Ne. Gamma-ray decays from excited states as well as inclusive and exclusive cross-sections were measured in the ^{9}Be(^{32}Mg,^{30}Ne γ)X two-proton knockout reaction at incident beam energies of 99.7 and 86.7 MeV/A. The measured inclusive cross section sigma = 0.22(4)mb is suppressed compared to calculation and is indicative of a reduced overlap of initial and final state wavefunctions. We interpret this reduction as a result of large 4p4h intruder components present in ^{30}Ne, but not ^{32}Mg. Large 4p4h amplitudes are predicted to generate increased T=1 paring strengths and to help stabilize the heavier fluorine isotopes against neutron decay. A new gamma-ray transition at 1443 keV is assigned to the decay of the 4^{+} state based on the spin dependent sigma for 2 proton knockout from the $(d5/2)^4$ configuration.

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