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Narrowing of the neutron sd-pf shell gap in ^{29}Na[1] AARON HURST, Lawrence Livermore National Laboratory, TIGRESS COLLABORATION — The wave-function composition for the low-lying states in ^{29}Na was explored by measuring their electromagnetic properties using the Coulomb-excitation technique. A beam of $^{29}Na^{5+}$ ions, postaccelerated to 70 MeV, bombarded a ^{110}Pd target with a rate of up to 600 particles per second, in the first physics experiment using the ISAC-II facility at TRIUMF. Six segmented clover detectors of the TIGRESS γ-ray spectrometer were used to detect deexcitation γ rays in coincidence with scattered or recoiling charged particles in the segmented silicon detector, BAMBINO. A preliminary reduced transition matrix element $|\langle \frac{5}{2}^{+}_{1} || E2 || \frac{3}{2}^{+}_{\rm gs} \rangle| = 0.229(20)$ eb was derived for ^{29}Na from the measured γ-ray yields for both projectile and target. This first-time measured value is consistent with the most recent Monte Carlo shell-model calculation (MCSM) of Utsuno *et al.*, predicted to be 0.232 eb, indicating an approximately equal admixture of both *sd* and *pf* components in the wave function, and also providing evidence for the narrowing of the *sd-pf* shell gap from ~ 6 MeV for stable nuclei to ~ 3 MeV for ^{29}Na.

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