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p-n configurations of symmetric and mixed-symmetric states M. PERRY, WNSL Yale Univ., FSU, V. WERNER, WNSL, N. PIETRALLA, WNSL, N. BENCZER-KOLLER, Rutgers University — The first 2^+ state in collective even-even nuclei is a proton-neutron (pn) symmetric quadrupole excitation. It has a mixed-symmetric counterpart, which has p-n anti-symmetric parts in the wavefunction. A strong p-n interaction mixes the proton and neutron configuration, creating a low-lying symmetric state and a higher-lying mixed-symmetric state. The significant energy difference between the proton and neutron j=2 configurations and rather weak mixing between the proton and neutron state wavefunctions in Zr isotopes results in a 2_1^+ state with neutron dominance and a 2_2^+ state with proton dominance, which was identified as the one-phonon mixed-symmetry 2^+ state. This signature in Zr provides an ideal basis for studying configuration mixing. This mixing is studied experimentally by measuring g factors. Theoretical predictions will be compared with recent experimental results.

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