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Deformed Structures and Shape Coexistence in Zr-98[1] BRUNO OLAIZOLA, Univ of Guelph, 8PI COLLABORATION — The nuclear structure of the zirconium isotopes evolves from a mid-open neutron shell deformed region (^{80}Zr), through a closed shell (^{90}Zr), to a closed subshell (^{96}Zr), and then to a sudden reappearance of deformation (^{100}Zr). This rapid onset of deformation across the Zr isotopes is unprecedented, and the issue of how collectivity appears and disappears in these isotopes is of special interest. Until recently, only ^{98}Zr (and maybe ^{100}Zr) had indirect and weak evidence for shape coexistence, with only speculative interpretation of the experiments. Recent results from high precision B(E2) measurements provided direct evidence of shape coexistence in ^{94}Zr and suggested that it may happen in many other nuclei in this region. In order to provide direct evidence of shape coexistence in ^{98}Zr a high-statistical-quality $\gamma\gamma$ experiment was carried out with the 8π spectrometer at ISAC-TRIUMF. The array consists of 20 Compton-suppressed hyper-pure germanium detectors plus β particle and conversion electron detectors. Excited states up to ~ 5 MeV in ^{98}Zr were populated in the β^- decay of ^{98}Y $J^\pi = (0^-)$ and ^{98m}Y J=(4,5). Preliminary results on key branching ratios will be presented.

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