

Abstract Submitted  
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**Shape Coexistence in Neutron Deficient Mercury Isotopes<sup>1</sup>** ANDREW MACLEAN, University of Guelph, GRIFFIN COLLABORATION — Neutron deficient nuclei near  $Z=82$  exhibit one of the most extensive manifestations of shape coexistence across the nuclear chart. In the even-even mercury isotopes,  $^{182-188}\text{Hg}$ , Coulomb excitation experiments have provided a sensitive probe to determine the E2 matrix elements, giving information on the nature of the deformation. For transitions of  $J^\pi \rightarrow J^\pi$  with  $J \neq 0$ , the determination of  $B(E2)$  values also depend on the E0 matrix element. One of the best methods to extract the mixing ratios is through  $\gamma - \gamma$  angular correlation measurements following  $EC/\beta$  decay where a very high sensitivity can be achieved. The GRIFFIN spectrometer, located at TRIUMF-ISAC is ideal for such measurements and has been used with the decay of  $^{188-200m}\text{Tl}$ . Also included was measurement was the PACES array, used for the detection of conversion electrons to determine E0 transition strengths. The extraction of E0 components of mixed transitions are of utmost importance as they may be enhanced if there are significant mixings between the shape-coexisting configurations. By combining measurements of mixing ratios, conversion electron intensities and lifetimes a direct measurement of the mixing between the shape coexisting structures will be presented.

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