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Single particle structure in neutron-rich Sr isotopes approaching N=60[1] REINER KRÜCKEN, TRIUMF / University of British Columbia — The shape coexistence and shape transition at N=60 in the Sr, Zr region is of subject of substantial current experimental and theoretical effort. An important aspect in this context is the evolution of single particle structure for N<60 leading up to the shape transition region, which can be calculated with modern large scale shell model calculations using a 78Ni core or Beyond Mean Filed Models. One-neutron transfer reactions are an ideal tool to study single-particle energies as well as occupation numbers. Here we report on the study of the single-particle structure in 95-97Sr via (d,p) one-neutron transfer reactions in inverse kinematics. The experiments were performed at TRIUMF's ISAC facility using the TIGRESS gamma-ray spectrometer in conjunction with the SHARC charge particle detector. Highly charged beams of 94,95,96Sr, produced in the ISAC UC_x target, were accelerated to 5.5 AMeV in the superconducting ISAC-II linac. Initial results of these experiment will be discussed in the context of the evolution of single-particle structure in this region. Results of both angular distributions and spectroscopic factors extracted from the collected observables will be presented and discussed in the context of theoretical shell model calculations.

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