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Shape Co-existence at N=60: Single Particle Structure of ^{95}Sr ¹

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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. One-neutron transfer reactions are an ideal tool to study single-particle energies as well as occupation numbers which can be compared to results of modern large scale shell model calculations using a ^{78}Ni core. Here we report on the study of the single-particle structure in ^{95}Sr via the one-neutron transfer reaction $d(^{94}\text{Sr},p)^{95}\text{Sr}$ in inverse kinematics. The experiment was performed at TRIUMF's ISAC facility using the TIGRESS gamma-ray spectrometer in conjunction with the SHARC charge particle detector and a fusion veto detector. The charge state of the singly charged ^{94}Sr beam extracted from the ISAC UC_x target was increased to 15^+ in an ECR source before acceleration to 5.5 AMeV. Gamma-rays as well as light charged particles are detected to extract energies, cross-sections, and proton angular distributions for the low-lying states in ^{95}Sr . Initial results of this experiment will be discussed in the context of the evolution of single-particle structure in this region.

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