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The Study of Halo States in ^{10}Be and ^{11}Be[1] K. KUHN, F. SARAZIN, Colorado School of Mines, (PCB)^2 COLLABORATION, TIGRESS COLLABORATION — One-neutron transfer reactions are being used to study single-particle neutron states in nuclei. For one-neutron halo nuclei, such as ^{11}Be, the (p,d) reaction enables the removal of the halo neutron or of one of the core neutrons. This way, it is possible to simultaneously study the halo wavefunction of the ^{11}Be ground-state but also a possible excited halo state in ^{10}Be. The ^{11}Be(p, d)^{10}Be transfer reaction at 10 MeV/nucleon is being investigated at the TRIUMF-ISAC II facility with the Printed Circuit Board Based Charged Particle ((PCB)^2) array inside the TRIUMF ISAC Gamma-Ray Escape-Suppressed Spectrometer (TIGRESS). The ground state and first excited state of ^{10}Be can be directly identified using deuteron identification and kinematics from the charged particle array. To differentiate between the four excited states in^{10}Be around 6 MeV, including the suspected halo state (2^- state), the gamma rays from TIGRESS are used in coincidence with the identified deuterons. Analysis is still in progress and the preliminary angular distributions for the ^{10}Be ground state and first excited will be shown along with gamma ray data used in coincidence with the deuterons.

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