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Investigation of excited 0^+ states in ^{160}Er populated via the (p,t) two-neutron transfer reaction C. BURBADGE, Univeristy of Guelph — The interpretation of low-lying 0^+ states in rare-earth nuclei remains a highly-debated topic in nuclear structure. Resolving the nature of these states is particularly difficult due to the presence of shape coexistence which can increase the number of low-lying states, as well as the paucity of data for excited 0^+ states. Two-neutron transfer reactions are ideal tools for probing $0^+ \rightarrow 0^+$ transitions in deformed nuclei. In the present work, excited 0^+ states are studied via a series of (p,t) reactions on ^{162,164,166,168}Er targets at the Maier-Leibnitz Laboratory in Garching, Germany. Reaction products were momentum-analyzed with a Q3D magnetic spectrograph. The results confirm strong population of the 0_2^+ state of 18% of the ground state strength in ^{160}Er consistent with the strength observed in other $N = 92$ isotones, suggesting a special character for this state which is inconsistent with a β-vibration interpretation. Preliminary results of the 0^+ strength in the aforementioned (p,t) experiments will be presented and placed into context with similar experiments in the $N = 90$ region, underlining the potential role of the $112^-[505]\nu$ orbital in the observed 0_2^+ state strength.

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