

Abstract Submitted
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Search for α -Cluster Structure in Exotic Nuclei with the Prototype Active-Target Time-Projection Chamber¹ A. FRITSCH, Gonzaga Univ, Y. AYYAD, D. BAZIN, S. BECEIRO-NOVO, J. BRADT, L. CARPENTER, M. CORTESI, W. MITTIG, National Superconducting Cyclotron Laboratory / Michigan State University, D. SUZUKI, RIKEN Nishina Center, T. AHN, J.J. KOLATA, University of Notre Dame, F.D. BECCHETTI, University of Michigan, A.M. HOWARD, Aarhus University — Some exotic nuclei appear to exhibit α -cluster structure. While various theoretical models currently describe such clustering, more experimental data are needed to constrain model predictions. The Prototype Active-Target Time-Projection Chamber (PAT-TPC) has low-energy thresholds for charged-particle decay and a high luminosity due to its thick gaseous active target volume, making it well-suited to search for low-energy α -cluster reactions. Radioactive-ion beams produced by the *TwinSol* facility at the University of Notre Dame were delivered to the PAT-TPC to study nuclei including ^{14}C and ^{14}O via α -resonant scattering. Differential cross sections and excitation functions were measured. Preliminary results from our recent experiments will be presented.

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Adam Fritsch
Gonzaga Univ

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