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Cluster Structure and 3-body decay in ^{14}C[1] LISA CARPENTER, D. BAZIN, W. MITTIG, Y. AYYAD, S. BECEIRO NOVO, J. BRADT, National Superconducting Cyclotron Laboratory/Michigan State University, T. AHN, J.J. KOLATA, University of Notre Dame, F.D. BECCHETTI, University of Michigan, A. FRITSCH, Gonzaga University — Recent model calculations with most advanced methods for cluster states have shown the need of experimental data to probe the structure of light exotic nuclei, including those with α-clustering, such as ^{14}C. The Prototype Active Target Time Projection Chamber (PAT-TPC) allows us to investigate these types of structures, giving access to the full excitation function with a single beam energy. This type of experiment measures resonances in ^{14}C that can be compared to the models. With an improved Micromegas pad plane with a circular backgammon design we are able to investigate 3-body decays in addition to 2-body scattering. The measurements were carried out by resonant alpha-scattering on ^{10}Be beam delivered by the *TwinSol* facility at the University of Notre Dame.

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