

Abstract Submitted
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Testing and Characterization of Acrylic for the Daya Bay Reactor Neutrino Experiment MICHAEL KROHN, BRYCE LITTLEJOHN, KARSTEN HEEGER, University of Wisconsin — The Daya Bay reactor antineutrino experiment will determine the last unknown neutrino mixing angle θ_{13} with a sensitivity of .01 or better. The measurement of θ_{13} is important for theoretical model building and for possible searches of CP violation in the neutrino sector. Poly(methyl methacrylate), otherwise known as acrylic, is an important component for the construction of the target vessels in the antineutrino detectors and we have performed multiple tests that determined its unique properties. My project has been to understand the properties of acrylic in order to minimize systematic errors and test mechanical and materials compatibility issues in the Daya Bay reactor antineutrino experiment. These tests address both the mechanical and technical issues of the detector as well as the systematic affects introduced by the acrylic.

Michael Krohn
University of Wisconsin

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