



Contribution ID: 5

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Testing the Standard Model with the WISArD Experiment

Thursday 28 November 2024 17:00 (25 minutes)

The objective of the WISArD experiment is to test the existence of new physics in the weak interaction sector of the Standard Model of particle physics using beta decay. The angular correlation parameter a and the Fierz interference term b , which characterize beta decay, are sensitive to the existence of exotic scalar or tensor currents. These currents are not included in the description of the electroweak interaction within the framework of the Standard Model, which only involves vector and axial-vector currents. The goal of the WISArD experiment is to measure these parameters in the decay of ^{32}Ar with a precision of about 0.1%, in order to provide constraints on new physics that are competitive with the direct searches conducted at very high energies at the LHC. The experiment is located in the ISOLDE experimental hall at CERN. The current analysis presents preliminary results on the angular correlation parameter, including a portion of the systematic errors, which account for the experimental setup, analysis fits, and beam contamination.

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