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Status of the Twist Measurement of the Muon Decay Parameter $P_\mu\xi$ BLAIR JAMIESON, University of British Columbia, TWIST COLLABORATION — Muon decay, a purely leptonic decay, is a relatively simple interaction to study when looking for physics not explained by the standard Vector minus Axial Vector (V-A) theory of electroweak interactions. The TWIST spectrometer measures the doubly differential spectrum of decay positrons for a wide range in reduced energy and angle between muon and decay positron momentum. By measuring a large part of muon decay spectrum, TWIST is sensitive to the exact shape of the decay spectrum, and can simultaneously measure three of the muon decay parameters with a high degree of accuracy. I will review the status of the TWIST experiment, and physics related to the muon decay parameter $P_\mu\xi$. TWIST will measure $P_\mu\xi$ by about an order of magnitude better than previous direct measurements. The status of analysis of systematic uncertainties in the measurement of $P_\mu\xi$ is presented.

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