

Abstract Submitted
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High Precision Measurement Of The Pion Branching Ratio TRISTAN SULLIVAN, University of British Columbia, PIENU COLLABORATION — The pion branching ratio $R = \frac{\Gamma(\pi \rightarrow e\nu + \pi \rightarrow e\nu\gamma)}{\Gamma(\pi \rightarrow \mu\nu + \pi \rightarrow \mu\nu\gamma)}$ can be calculated to a precision of better than one part in ten thousand using the Standard Model (SM). Averaging the most precise measurements of this quantity gives a value consistent with the SM prediction but whose error is more than ten times greater than the theoretical uncertainty. The PIENU experiment at TRIUMF aims to exceed the precision on the world average by more than a factor of five. The largest contribution to the overall error comes from the response function of the primary calorimeter to positrons produced by $\pi \rightarrow e\nu$ decay. Measurements have been taken to characterize this effect, and have been compared in detail to Monte Carlo simulation. The agreement between data and simulation suggests the response function can be determined to the required precision. The analysis of the data and comparison with simulation will be presented.

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