

Abstract Submitted
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A New Measurement of the Muon Lifetime and the Determination of the Fermi Coupling Constant¹ KEVIN GIOVANETTI, James Madison University, MULAN COLLABORATION² — A new measurement of the muon lifetime, τ_μ , at the 11 ppm level will be reported. This is the first result from the MuLan experiment, which is pursuing the ambitious goal of a 1 ppm determination of the muon lifetime—a 20-fold improvement. The experiment is motivated by recent theoretical improvements in extracting the Fermi coupling constant G_F , from the measured lifetime; the theoretical uncertainty is now less than 1 ppm. The coupling constant G_F is an essential parameter of the standard model and represents the strength of the weak interaction. Progress, highlights and future plans for this experiment will also be discussed.

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