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The Calibration system of the Muon G-2 Experiment at Fermilab

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The muon anomaly (g-2)/2 has been measured to 0.54 parts per million by E821 experiment at Brookhaven Lab, and at present there is a 3 to 4-standard deviation difference between the SM and experimental values.
A new muon (g - 2) experiment, E989, is being prepared at Fermilab that will improve the experimental error by a factor of four to clarify this difference.
A central component to reach this fourfold improvement in accuracy is the high-precision laser calibration system which should monitor the gain fluctuations of the Calorimeter Photodetectors at 0.04% accuracy.
I will review this system, focusing on the technical challenges, solutions, and achievements obtained so far.

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