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One-loop effects on Z boson decays in the SM EFT

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I will present partial one-loop corrections to SM EFT parameterizations of new physics effects on Z boson decays, and discuss the impact of LEP I data on SM EFT fits. The findings indicate that any measurement which reaches percent-level sensitivity to new physics effects in Z decays, like the precise LEP data, cannot be consistently used at higher precision to reach fixed conclusions on Wilson coefficients, as too many operators contribute at loop level which are currently not constrained in a consistent EFT treatment. This work motivates further effort in understanding the correct treatment of high energy, non-resonant data in an EFT context.

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