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The Current Status of g-2

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Recently, important updates were made for the hadronic contribution to the theoretical prediction of g-2. The isospin-breaking-corrections, needed in the comparison of the two pion spectral functions from tau decays and e+e- annihilations, were improved using new experimental and theoretical input. The recently published BABAR data were included in the global average of e+e- spectral functions. These data, as well as the ones from tau decays, were combined using newly developed software, featuring improved data interpolation and averaging, more accurate error propagation and systematic validation. The discrepancy between the e+e- and the tau-based result is reduced from previously 2.4 to 1.5 sigma. The full Standard Model prediction of g-2, obtained using e+e- data, differs from the experimental value by 3.2 standard deviations.

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