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High-precision calculations of the electron anomalous magnetic moment in quantum electrodynamics

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The electron anomalous magnetic moment is the most precise value in microphysics. The agreement between theoretical calculations and experiments is good, but last years it became not so ideal due to an improved experimental precision. The current status of this agreement/disagreement for the electron $g-2$ will be reviewed as well as for the fine-structure constant.

In 2019 the author has computed a large part of the 5-loop contribution to the electron $g-2$. It is known that there is a discrepancy between this value and the previously known value. The current status of this discrepancy and independent calculations will be revealed.

Author's method of calculation will be briefly explained, since all computations of this precision level require special methods to make them realizable on existing computers. A progress in further calculations will be demonstrated.

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