

## Precise determination of the fine structure constant and test of QED

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Using an atom interferometer, it is possible to precisely measure the ratio between the Planck constant and the mass of an atom. This measurement allows improving the determination of the fine structure constant  $\alpha$ . By using this value in the QED prediction of the magnetic moment of the electron, it is possible to precisely test the Standard Model. This test is particularly relevant as it is closely related to a similar test made on the muon that shows a discrepancy between theory and experiment.

In this talk, I will present how we have performed a measurement at the level à 80 ppt of  $\alpha$ . I will also discuss the perspectives for improving the measurement and the recent development made on the experimental setup.

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