

Towards the implementation of a Dual Quantum Gravimeter based on ^{133}Cs and ^{87}Rb atoms

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Abstract

Atom interferometry with neutral atoms has proven to be highly sensitive to inertial effects and this has made it a very significant area of research. Gravimeters based on atomic interference not only offer the ability to measure the value of local acceleration g with high accuracy, but also help validate highly relevant principles such as Einstein's Equivalence Principle. The implementation of a gravimeter requires a series of well-defined elements such as the vacuum system, including the interferometric region, the laser system for the cooling, control and detection of atoms, and the control system to control the experiment. This work shows the progress of the construction of the first dual quantum gravimeter based on ^{133}Cs and ^{87}Rb atoms. **Keywords:** Gravimeter, Atom Interferometry, ^{133}Cs , ^{87}Cs , Dual gravimeter