

Optical system for the optical lattice trapping of heavy alkali atoms

Precision spectroscopy of heavy atoms, including francium, is expected to provide insight into the origins of fundamental symmetry violation. The key for achieving high experimental sensitivity is to cool the atoms and trap them within the measurement region. We report on the construction of an optical system that enables us to trap alkali atoms in a one-dimensional optical lattice. The system is built to work with a laser-cooled ensemble of stable rubidium or cesium atoms, but also serves as a prototype for francium atoms.

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