

Atomic cesium magnetometers in the search for neutron EDM

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Atomic magnetometers are high precision detectors used for magnetic field measurement in many applications, including experiments testing fundamental symmetries in which knowledge of the magnetic field is essential. One such experiment is the search for the electric dipole moment of the neutron, a version of which is located at the new ultracold neutron source of the Paul Scherrer Institut in Villigen. In this experiment, an array of 16 optically-pumped double resonance atomic magnetometers based on cesium atoms is used to measure the spatial and temporal magnetic field distribution with a 10^{-7} relative precision. In this contribution we show the magnetometer technology and present the results of magnetic field measurements made under operating conditions of the nEDM experiment.

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