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【3002】Analysis of Window-function Modulated Radio Frequency Pulses for the n2EDM experiment

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The n2EDM experiment will search for the neutron electric dipole moment, to elucidate the Baryon Asymmetry of the universe.

The precession frequency of spin-polarised neutrons will be measured in a magnetic field and an electric field, in a Ramsey-type experiment.

The magnetic field will be continuously probed by a laser via the spin precession of Hg atoms in the precession chamber to account for fluctuations.

The radio frequency pulses required to flip the neutron spins relative to the magnetic field axis can affect the Hg spins, and vice versa. The application of window functions to these pulses was investigated to minimize these effects and the corresponding systematic uncertainties.

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