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Frequency Shifts in Neutron Electric Dipole Moment Experiments[1]

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Searches for the Electric Dipole Moment (EDM) of the free neutron are sensitive to new sources of Charge-Parity (CP) symmetry violation. Typically, the frequency of precession of the neutron's spin in a magnetic field is measured for different values of a parallel electric field. A frequency shift correlated with the direction and magnitude of the electric field is proportional to the EDM. Most modern searches for the neutron EDM rely on the well-known Ramsey separated-oscillatory-field technique. This technique will be discussed and contrasted with two new techniques being developed for a new neutron EDM search at the Spallation Neutron Source at ORNL.

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