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## Development of NMOR magnetometer for spin-maser EDM experiment

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We have been investigating the frequency stability of the low-frequency nuclear spin maser with  $^{129}\text{Xe}$  aiming at EDM (permanent Electric Dipole Moment) experiment. One of the main sources of this frequency instability comes from the field fluctuation of the applied static field  $B_0$ . The present stability 30 nG of the applied field  $B_0=30$  mG in a time scale of  $10^4$  s should be suppressed by use of a highly sensitive magnetometer.

We are now preparing for operation of Rb magnetometer based on NMOR (Nonlinear Magneto Optical Rotation) in the spin maser experiment. Systematic measurement of the NMOR spectrum with several Rb cells coated with an antirelaxation agent or including buffer gas was performed. We also started to operate the NMOR magnetometer with a frequency modulated laser beam in order to be used at  $B_0=30$  mG.

We will present the present status of the above development and the prospect for the EDM experiment.

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