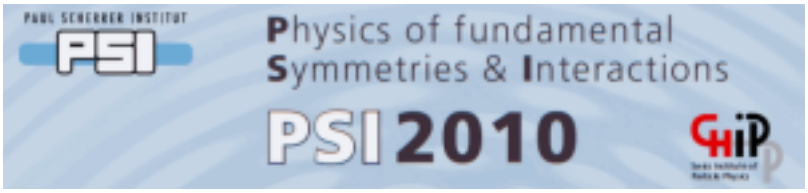

Contribution ID: **65** Type: **Poster**

Development of NMOR magnetometer for spin-maser EDM experiment

Tuesday, 12 October 2010 17:00 (0 minutes)

We have been investigating the frequency stability of the low-frequency nuclear spin maser with 129Xe 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 B0. The present stability 30 nG of the applied field B0=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 B0=30 mG.
We will present the present status of the above development and the prospect for the EDM experiment.

Primary author: Dr YOSHIMI, Akihiro (RIKEN)

Co-authors: Mr HAYASHI, Hironori (Tokyo Institute of Technology); Prof. ASAHI, Koichiro (Tokyo Institute of Technology); Dr UCHIDA, Makoto (Tokyo Institute of Technology); Mr TSUCHIYA, Masato (Tokyo Institute of Technology); Dr FURUKAWA, Takeshi (Tokyo Institute of Technology); Mr INOUE, Takeshi (Tokyo Institute of Technology); Mr NANAO, Tsubasa (Tokyo Institute of Technology)

Presenter: Dr YOSHIMI, Akihiro (RIKEN)

Session Classification: Poster Session