

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Experimental search for EDM in diamagnetic atom ^{129}Xe using active nuclear spin maser YUICHI ICHIKAWA, RIKEN Nishina Center, TOMOYA SATO, YUICHI OHTOMO, YU SAKAMOTO, SHUICHIRO KOJIMA, CHIKAKO FUNAYAMA, CHIKA HIRAO, TAKAHIRO SUZUKI, MASATOSHI CHIKAMORI, ERI HIKOTA, HIROKAZU MIYATAKE, TSUBASA NANA O, KUNIFUMI SUZUKI, MASATO TSUCHIYA, Tokyo Institute of Technology, TAKESHI INOUE, CYRIC, Tohoku University, TAKESHI FURUKAWA, Tokyo Metropolitan University, AKIHIKO YOSHIMI, Okayama University, CHRISTOPHER BIDINOSTI, University of Winnipeg, TAKASHI INO, KEK, HIDEKI UENO, RIKEN Nishina Center, YUKARI MATSUO, Hosei University, TAKESHI FUKUYAMA, RCNP, Osaka University, KOICHIRO ASAHI, Tokyo Institute of Technology — A permanent electric dipole moment (EDM) which directly means T -violation attracts much attention, because an unknown CP -violating phase which is necessary to understand the present matter-dominated Universe is expected to be probed by EDM. The present study aims at measuring the EDM in the diamagnetic atom ^{129}Xe to a size of 10^{-28} ecm, stepping into a domain below the present upper limit by one order of magnitude. In the present experiment, we employ an active nuclear spin maser which has characteristics of the optical detection of the spin precession and the artificial production of the feedback field to sustain the spin precession over a long measurement duration. For the magnetometry in the measurement, a comagnetometer using ^3He is incorporated to the spin maser system. In this presentation, the current status of our experiment will be given.

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Date submitted: 30 Jun 2014

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