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Development of a neutralizer and the magneto optical trap system toward the EDM search TAKAHIRO AOKI, SHUN ANDO, HIROSHI ARIKAWA, Tohoku University, SAKI EZURE, Retired, KEN-ICHI HARADA, TOMOHIRO HAYAMIZU, TAKESHI INOUE, TAISUKE ISHIKAWA, MASATOSHI ITOH, KO KATO, KOSUKE SAKEMOTO, AIKO UCHIYAMA, YASUHIRO SAKAMI, Tohoku University — If a non-zero electric dipole moment (EDM) is discovered, it suggests a CP violation that is important to explain the generation of matter dominant universe. To search for the electron EDM, we use Fr atoms that have a relatively simple electronic structure and a large enhancement factor of electron EDM. It is necessary to trap Fr atoms in a magneto-optical trap for EDM experiment. At present, searching for the resonance frequency of Fr atoms is undertaken. The experimental technique to trap and observe a small number of atoms is needed to search the resonance frequency. We have searched for parameters for trapping and observing the small number of atoms using Rb atoms whose resonance frequency is able to be fixed by using reference cell. In addition to this, studying of an yttrium neutralizer that is used for changing ions to neutral atoms is needed to trap as much Fr atoms as possible.

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