

Status and progress on the NL-eEDM experiment

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The NL-eEDM experiment aims to set a new limit on the permanent electric dipole moment of the electron (eEDM), in order to constrain CP-violation as it appears in many standard model extensions. We use an all-optical method to probe properties of the barium-fluoride (BaF) molecule. A novel spin-precession method permits identification of possible false EDM signals from the optical signal[1].

The experiment has recently been moved to a new laboratory and is currently in the process of reassembly. We will discuss the conclusions from previous data runs and current improvements of the experimental procedure.

[1] Boeschoten, A., V. R. Marshall, T. B. Meijknecht, A. Touwen, H. L. Bethlem, A. Borschevsky, S. Hoekstra, et al. 'Novel Spin-Precession Method for Sensitive EDM Searches', 2023. <https://doi.org/10.48550/ARXIV.2303.06402>.

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