Contribution ID: **13** Type: **not specified**

Status and progress on the NL-eEDM experiment

Friday, November 8, 2024 2:10 PM (20 minutes)

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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Session Classification: Parallel Sessions (II)