

Challenges of the world-wide experimental search for the electric dipole moment of the neutron



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Analysis of the FID signal of the Hg comagnetometer of nEDM experiment at PSI

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The nEDM experiment, carried out in the Paul Scherrer Institute in Villigen, Switzerland, measures the electric dipole moment of the neutron. An important part of the set-up is an 199-Hg cohabiting magnetometer. A thorough research on the magnetometer's FID signal analysis was main topic of the author's master thesis. The poster will present main conclusions arising from the research. A method to effectively compare different approaches to the analysis is put forward and used to evaluate performance of a new approach proposed by the author. The evaluation includes discussion of systematic uncertainties due to magnetic field drifts. Also, a scheme for data analysis with the new approach is presented.

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