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【324】An active magnetic shield for the n2EDM experiment

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The search for the neutron electric dipole moment at PSI requires a stable, uniform magnetic field environment in the experimental chamber. To shield the n2EDM-experiment from slowly varying magnetic fields caused by neighbouring experiments we have constructed an intricate system of coils around the experiment, designed to compensate magnetic fields through an active feedback loop. The design for the active magnetic shield (AMS) was first presented in 2019. Now the AMS is fully constructed and able to compensate static and variable fields of up to $\pm$ 50 μT in the sub-Hertz frequency range. We will present the apparatus as built, performance measurements and strategies for further improvements of the system.

Theoretical Work

Author: ZIEHL, Nathalie

Presenter: ZIEHL, Nathalie

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