

# The neutron EDM experiment based at TU Munich

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An electric dipole moment (EDM) of a fundamental particle would be a manifestation of time-reversal symmetry breaking.

As a flagship-experiment with ultra-cold neutrons (UCN) at the FRM-II reactor at TU Munich in Germany, a new approach to search for this phenomenon in the neutron is being realized. With an envisaged sensitivity of ultimately  $10^{-28}$  ecm, the experiment aims for an improvement of the currently best limits by 2 orders of magnitude.

The experiment is based on a very modular design that enables the optimum development of many technical aspects rather independently. It further opens the possibility to implement future advancements of different technologies and experimental concepts, e.g. a cryogenic UCN storage with increased high-voltage and a  $4\pi$  magnetometer.

Part of the recent technical developments is the realization of a magnetically shielded environment with 100 pT/cm gradients at the position of the UCN chambers and means to characterize this. With all major hardware components on site in summer 2014, preparations for commissioning the apparatus with UCN in 2015 are currently pursued.

An overview of the ongoing activities will be presented in this talk.

## References

[1] I. Altarev et al., Il Nuovo Cimento 35 C **122** (2012).