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Development of a Talbot-Lau interferometer for the measurement of the neutron electric charge

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Neutron grating interferometers can be employed as powerful tools to perform high-precision measurements of deflection angles and scattering. A novel concept of a symmetric Talbot-Lau interferometer using absorption gratings is under development at the University of Bern. The ultimate goal of this project will be a sensitive measurement of the neutron electric charge. Currently, a proof-of-principle apparatus is being investigated at the cold neutron beamline BOA at the Paul Scherrer Institute. On the proposed poster, a description of the experiment, first experimental results concerning the setup, and the achievable sensitivities will be presented.

Primary author: PERSOZ, Marc (Universität Bern)

Co-authors: PIEGSA, Florian Michael (Universität Bern); Mr MARKAJ, Gjon (LHEP); HEIL, Philipp (Universität Bern)

Presenter: PERSOZ, Marc (Universität Bern)

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