



Contribution ID: 272

Type: Poster

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

Tuesday, 18 October 2022 16:33 (1 minute)

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.

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Session Classification: BBQ - Drinks & Posters