Contribution ID: **199** Type: **Poster**

Neutron guides and Ni/Ti multilayer supermirror coatings by the FRM II Neutron Optics group

Wednesday, 9 December 2020 17:40 (20 minutes)

The MLZ makes extensive use of modern neutron guides to transport and distribute the neutrons over large distances, which are installed and maintained by the neutron optics group. Adapted to the needs of the instruments with respect to wavelength distribution and angular dispersion the guide elements are coated by 58Ni or Ni/Ti supermirror coatings with m values up to 3.5 either procured externally or produced in our DC magnetron sputtering facility. The neutron optical properties of the individual mirror plates are verified with our neutron reflectometer TREFF. In the last year, a decent effort was made to improve the quality of the supermirrors produced by the neutron optics group in terms of reducing mechanical stress and increasing their reflectivity. For this purpose, experiments were conducted to optimize different parameters of the production process. The success of those experiments lead us to get supermirrors with better reflectivities and allowed us to explore the design and production of supermirrors with larger angle of total reflection beyond m=3.5, which was historically our limit. We present our in house neutron guide production and other service for the instruments.

Primary author: GOMEZ GUZMAN, Jose Manuel (Technische Universität München Heinz Maier-Leibnitz Zentrum (MLZ))

Co-authors: Dr LINK, Peter; MASALOVICH, Sergey

Presenter: GOMEZ GUZMAN, Jose Manuel (Technische Universität München Heinz Maier-Leibnitz Zentrum (MLZ))

Session Classification: Joint poster session of MLZ User Meeting and DN2020

Track Classification: UM: Neutron Methods