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Relocation and upgrade of the cold triple axis spectrometer FLEXX at MLZ, Munich: Larmor diffraction and inelastic scattering

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The cold triple-axis spectrometer (TAS) FLEXX at HZB was a well-designed and upgraded instrument [1-4]. There was a strong wish that this excellent instrument should be preserved for the community. One attractive gap in the present instrumentation suite of MLZ, is the Larmor-diffraction technique [5-6] (LD) and, as a natural extension, cold neutron resonant spin echo (NRSE). TAS comes at no extra cost, as it is the main backbone of such an instrument.

The instrument will be placed on a cold neutron guide and essentially merged with the former MIRA TAS. Further, new developments are under way to allow for application of magnetic fields at the sample, hitherto not possible [7-9]. This opens up new vistas in the exploration of materials. A last attractive option is the possibility to combine high magnetic fields together with cold TAS.

The monochromator shielding of FLEXX is strengthened to enable its usage at the FRM-II reactor.

A new monochromator mechanics is designed in order to allow for double focussing optics, but in the same time leave the beam unaffected for downstream instruments.

The sample table is completely freshly made in order to allow heavy sample environment, up to 1000 kg. A multi-analyser will be finally employed to allow for quick surveys in (Q, ω) space.

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Primary authors: ZAHREDDIN, Daniel (FRM II); Dr SKOULATOS, Markos (Heinz Maier-Leibnitz Zentrum); Mr TRALMER, Franz (Max Planck Institute for Solid State Research); KELLER, Thomas (Max Planck Institute for Solid State Research); Mr HERTWIG, Martin (Heinz Maier-Leibnitz Zentrum); GEORGII, Robert; Mr MANTWILL, Andreas (Heinz Maier-Leibnitz Zentrum)

Presenter: ZAHREDDIN, Daniel (FRM II)

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