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Development of a cylindrical MiniMuPAD

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Spherical neutron polarimetry was systematically applied over the last two decades. This technique allows to determine all nine components of the depolarisation matrix and to solve the Blume-Maleyev equations. It offers to investigate magneto-electric coupling, non-collinear magnetic structures, the chirality of magnetic scattering or to distinguish between spin flip and non-spin flip scattering. Therefore it allows for the separation of nuclear and magnetic scattering. Inspired by the cryogenic polarisation analysis device (CryoPAD) by Tasset in 1989, the Mu-metal Polarisation Analysis Device (MuPAD) presented by Janoschek et al, followed by a more compact form, namely MiniMuPAD, introduced by Haslbeck and Kindervater, we want to report on the currently being developed cylindrical MiniMuPAD. It is comparable to the existing MiniMuPAD, but now the precession coils are bent into cylindrical shape around the sample. It is, hence, no longer restricted to small angles as before. Further, due to its size, it is easy to handle and can be combined with a cryostat.

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