

Meeting on measures to reduce magnetic fringe fields along the  $\pi$ M3 beam line generated by the COBRA magnet, Friday, 12 May 2006 at PSI.

Attendees: P.-R. Kettle, W. Ootani (MEG collaboration)  
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P. Winter (MuLan collaboration)

## Summary

In the current production cycle of the PSI Ring Cyclotron the COBRA magnet has been energized for the first time during normal user operation at the  $\pi$ M3  $\mu$ SR facility. During the first 3 weeks of operation, where only the GPS instrument was taking data, users reported changes of the measured decay asymmetry, the reason of which only became clear on 11 May, when the LTF instrument was used for the first time this year. It was found that when the COBRA magnet is ramped up, the muon rate at the LTF drops by a factor of 20, and the one at GPS by about 35%. While at the GPS partial recovery of the muon rate by a combination of beam tuning and wider slits seems possible, this is not the case at the LTF.

In the meeting of Friday 12 May we agreed in that appropriate passive shielding of the COBRA fringe field (*e.g.* by a combination of a soft iron sheet along the wall between the  $\pi$ E5 and  $\pi$ M3 areas and  $\mu$ -metal shields around the drift tubes between ASK31 and the  $\mu$ SR instruments) would be the best solution of the problem.

It was further agreed that the MEG collaboration will take care of the layout, design and realization of the shielding necessary to reduce the fringe fields along the  $\pi$ M3 beam line to a tolerable level.

PSI, 17 May 2006  
Dierk Herlach