Mrs. C. Kleinpeter / NP

CERN/EEC-75/18
Ref.:
Date: 20th March 1975

M E M O R A N D U M

Copy to/Copie à:

To/A : The Chairman of the EEC and the PS Coordinator

From/De : (g-2) group

Subject/: High intensity request for (g-2)
Objet

The first results of the muon (g-2) experiment, submitted for publication, have improved on the old error by a factor of 12. Contributions to the error are 22 ppm statistics and 3.5 ppm systematic uncertainties, 23 ppm added in quadrature. These results are based on about 5 weeks of data-taking in 1974, most of it with 2 bunches from the PS. With 17 ($20\frac{1}{2}$) weeks scheduled for 1975, we are seeking ways to realize the potential of this facility, that is, to reduce the statistical error by a factor of about 3. With calendar time increased by more than 4, and with some improvement in efficiency, we still need about a factor of 3 in particles per PS burst. Dead-time effects do not become important until an increase of at least a factor of 6. Other effects of high intensity are presently well below the 1 ppm level, and we believe they would be safely controlled with a factor of 3 to 4 above our 1974 rate. We therefore request that (g-2) be allotted 3 PS bunches per pulse before the booster becomes available, and 2 bunches with booster afterwards.

cc L. Hoffmann/MPS