

Precise Absolute Energy Calibration in a Muon Collider, B. NORUM, University Of Virginia, Charlottesville, Virginia, USA; R. ROSSMANITH, Forschungszentrum Karlsruhe, ANKA Project Group, Germany - During the last years muon colliders moved from an outsider position into the center of interest. Muon colliders can become e.g. a possible candidate for a lepton Higgs factory under the condition that the luminosity is sufficient high. It was shown in a previous paper that the muons are polarized and the polarization can be maintained under certain circumstances during acceleration and storage. The spin precession in the collider and therefore the absolute energy can be measured by the decay of muons into electrons/positrons in the same way as it is measured in a muon $(g-2)/2$ experiment as it was pointed out already by several authors. This is a remarkable advantage over other accelerator concepts. Nevertheless, the muon collider will be a strong focusing machine and the energy spread of the beam might destroy the polarization at high energies. In order to overcome the depolarization it is proposed in this paper to install an RF system in a muon collider in order to decouple energy spread and spin spread via synchrotron spin matching.