Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Simulation of Beam induced Background at Muon Collider and Study of its properties CAMILLA CURATOLO, DONATELLA LUCCHESI, University and INFN of Padua, FRANCESCO COLLAMATI, INFN Rome, ALESSIO MEREGHETTI, CNAO, PAOLA SALA, INFN Milano, NIKOLAI MOKHOV, Fermilab, NAZAR BARTOSIK, INFN Turin, MASSIMO CASARSA, INFN Trieste, SERGO JINDARIANI, Fermilab, MARK PALMER, Brookhaven National Laboratory, SIMONE PAGAN GRISO, Lawrence Berkeley National Laboratory , RON LIPTON, Fermilab — Muon collider detector performance is critically related to the background produced by muon beam decay through the ring. It is therefore fundamental to contain the beam induced background and to carefully predict its characteristics. A novel simulation tool composed by LineBuilder and Fluka has been developed and the results obtained are benchmarked against the ones obtained by the MAP collaboration via MARS15. We report a detailed study of beam-induced background at few center-of-mass energies and comparison among some possible muon collider configurations.

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Date submitted: 08 Jan 2021 Electronic form version 1.4