

Progress on the Design of a High Luminosity Muon-Muon Collider, R. PALMER, Brookhaven National Laboratory, Upton, NY 11973 and A. TOLLESTRUP, Fermilab, Batavia, IL 60510, for The Muon Colider Collaboration - Parameters will be presented for a 2 + 2 TeV muon-muon collider with a luminosity of $10^{35} \text{ cm}^{-2} \text{ sec}^{-1}$. A 30 GeV 15 Hz proton source is used to make low momentum pions on a heavy target. A conventional 20 T Bitter solenoid is used to capture the pions, and a linac phase rotates them as they decay in a 5 T solenoidal channel. The muons are cooled, in 24 stages of ionization cooling, to a normalized emittance of 50 mm mrad and then accelerated in pulsed synchrotrons or recirculating accelerators. Collisions occur in 1000 turns in a separate collider ring with a 3 mm low-beta insertion. Lattice design, beam stability and detector background from muon decay will be discussed.

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