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## ☒365☒ **A final cooling scheme for muon colliders: a door opener for future discovery machines**

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Due to negligible synchrotron radiation, muon colliders have been considered a promising tool for new discoveries. A hot hadronic shower serves as a muon source. However, the large emittance of the produced beams poses a critical challenge for the design of muon colliders which require high-charge and dense muon beams. The only feasible way to reduce this emittance within the muons' short lifetime is based on the principle of ionization cooling. A final cooling scheme provides a gradual emittance reduction by the means of specific absorbers inside high-field magnets. In this work, the previous simulation studies are extended by optimizing the final emittance to the optimal values.

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