



Contribution ID: 140

Type: Talk

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

*Thursday, September 2, 2021 3:15 PM (15 minutes)*

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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**Session Classification:** Nuclear, Particle- & Astrophysics

**Track Classification:** Nuclear, Particle- and Astrophysics (FAKT - TASK)