Contribution ID: **571** Contribution code: **MOPS143** Type: **Poster Presentation**

Feasibility studies for a new transfer line to a muon cooling demonstrator at CERN

Monday 2 June 2025 16:00 (2 hours)

In the context of ongoing research for a future muon collider, one of the primary challenges is the efficient production and cooling of muons. To address this, a proposal is being explored to construct a demonstrator at CERN for testing a cooling cell. This demonstrator would include a target and focusing system, a chicane around a dump, and a cooling channel. A potential site for this facility is the end of the existing TT7 tunnel, which was used as a neutrino facility in the early 1980s and is presently used for storage of radioactive waste. This paper outlines the initial design studies for the transfer line that will deliver 14 GeV protons from the Proton Synchrotron to the target. The design aims to minimize costs while meeting all geometric and optical requirements. The possibility of operating the line up to 20 GeV is also explored.

Footnotes

Paper preparation format

LaTeX

Region represented

Europe

Funding Agency

Author: BRACCO, Chiara (European Organization for Nuclear Research)

Co-authors: KRZKEMPEK, Lukasz (European Organization for Nuclear Research); CALVIANI, Marco (European Organization for Nuclear Research); ARRUTIA SOTA, Pablo Andreas (Oxford University); LOSITO, Roberto (European Organization for Nuclear Research)

Presenter: BRACCO, Chiara (European Organization for Nuclear Research)

Session Classification: Monday Poster Session

Track Classification: MC1 :Colliders and Related Accelerators: MC1.T12 Beam Injection/Extraction and Transport