

nuSTORM: neutrino physics on the path to the muon collider

Friday 19 July 2024 10:00 (15 minutes)

The nuSTORM facility enables innovative neutrino physics studies through the decay of muons circulating in a storage ring. The well-defined composition and energy spectra of the neutrino beam from the decays of muons, combined with precise muon flux measurements, facilitate a diverse research program probing fundamental neutrino properties.

nuSTORM has been optimized to store muons with momentum tunable from 1 to 6 GeV/c, enabling precise measurements of $\nu\mu A$ and $\nu e A$ scattering over energy ranges relevant for long-baseline experiments. It also allows for highly sensitive searches for exotic processes and studies of short-baseline flavor transitions exceeding the reach of already planned experiments. As a technology testbed for high-brightness muon beams, nuSTORM is on the path towards a multi-TeV muon collider and could be part of a test-facility serving a muon-cooling demonstrator.

nuSTORM's status, physics capabilities and potential as a muon collider test-facility will be presented.

Alternate track

1. Accelerator: Physics, Performance, and R&D for Future Facilities

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