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## nuSTORM; Neutrinos from Stored Muons

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The nuSTORM facility will provide  $\nu_e$  and  $\mu\mu$  beams from the decay of low energy muons confined within a storage ring. The central momentum of the muon beam is variable, while the momentum spread is limited. The resulting neutrino and anti-neutrino energy spectra can be precisely calculated from the muon beam parameters, and since the decay of the captured muons is well separated in time from that of their parent pions, wrong flavour neutrino backgrounds can be eliminated. nuSTORM can contribute to this effort by providing the ultimate experimental program of scattering measurements. The cross section for the scattering on complex nuclei is sensitive to energy and momentum transfers. Data with both muons and electrons in the final state are therefore very valuable. Sensitivity to physics beyond the Standard Model (BSM) is provided by nuSTORM's unique features. This allows sensitive searches for short-baseline flavour transitions, light sterile neutrinos, nonstandard interactions, and non-unitarity. In synergy with the scattering program, new physics searches would also profit from measurements of exclusive final states, allowing for BSM neutrino interactions to be probed in neutrino-electron scattering and by searching for exotic final states. The status of the development of nuSTORM will be reviewed in the context of the renewed effort to develop high-brightness stored muon beams and as a route to very-high energy lepton-anti lepton collisions in the muon collider.

### In-person participation

Yes

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