

High intensity upgrades for fixed-target experiments at CERN

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A plethora of ideas for exploiting the full scientific potential at the fixed-target complex has been brought forward within the Physics Beyond Colliders Initiative (PBC) at CERN seeking to exploit the full intensity the Super Proton Synchrotron (SPS) can provide. Out of the findings of a PBC Task Force, a new project has been mandated to prepare the technical design for a new high-intensity user facility in the ECN3 cavern in the CERN North Area for beam dump and/or kaon physics. In addition, several experiments wish to have higher intensities of secondary beams to address searches for BSM physics, amongst them NA64, employing high-energy electron and muon beams, as well as MuonE, aiming to measure the hadron vacuum polarisation as an input to explain the $(g - 2)$ puzzle. Also in the QCD sector, several high-intensity experiments are proposed, such as AMBER with a rich physics programme ranging from determining the proton radius with muon beams to meson structure investigations.

Alternate track

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