

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



Contribution ID: 259

Type: **Contributed Talk**

COMPASS++/AMBER: Future measurements at the M2 beam line of the CERN SPS

Thursday, March 26, 2020 9:40 AM (20 minutes)

In the context of the Physics Beyond Colliders initiative at CERN, the COMPASS++/AMBER proto-collaboration recently submitted a proposal to the SPSC in which a broad experimental programme of measurements at the M2 beam line of the CERN SPS is described. It addresses fundamental issues leading to significant improvements in our understanding of strong interactions in the medium and long-term future. The proposed measurements cover a wide range in the squared four-momentum transfer Q^2 . At lowest values of Q^2 , a determination of the proton charge radius through elastic muon-proton scattering is planned, at intermediate Q^2 a spectroscopy of mesons and baryons by using dedicated meson beams, and at high Q^2 (i.e. small distances), studies of the structure of mesons and baryons via the Drell-Yan process are foreseen.

Beyond the CERN accelerators Long Shutdown-3, an upgrade of the M2 beam line by installing a radio-frequency separation for kaon and antiproton beams of high energy and high intensity is proposed to further unique measurements that cannot be performed elsewhere.

In the talk an overview of the full project which is expected to stretch across the next 10 to 15 years will be presented.

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Session Classification: Future Experiments

Track Classification: Future Experiments