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The NA60+ experiment at the CERN SPS: status and prospects

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The high-intensity beams provided by the CERN SPS in a wide energy interval offer a unique opportunity to investigate the region of the QCD phase diagram at high baryochemical potential. The fixed-target NA60+ experiment, proposed for taking data with Pb-Pb and p-A collisions at the SPS from 2029, aims at measurements of rare probes of the Quark-Gluon Plasma (QGP) in a beam-energy scan, in the interval sqrt(s_NN)= 6 - 17 GeV.

The experiment will include a MAPS-based vertex spectrometer, immersed in a dipole field, followed by a muon spectrometer with tracking detectors and a toroidal magnet. A rich physics program is foreseen. Electromagnetic observables will be studied, with the measurement of thermal dimuons and the investigation of signals of chiral symmetry restoration. Open/hidden charm and strange hadron production will also be accessible, with the possibility of measuring various hypernuclear states.

In the talk, the status of the project will be discussed, showing recent progress in the R&D phase and the main results on physics performance studies. The competitiveness and complementarity of NA60+ in the landscape of the experiments foreseen at other facilities will also be discussed.

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