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Identified particle analysis with ALICE at the LHC

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A long-standing topic in high-energy physics is how matter behaves in regimes of very high energy density. While ordinarily quarks and gluons are confined to hadrons, it is expected that, given sufficiently large energy densities, a deconfined state of matter called the Quark-Gluon Plasma (QGP) is formed. Conditions for the QGP to be formed can be achieved in the laboratory when heavy nuclei collide at ultra-relativistic speeds in accelerators such as the Relativistic Heavy Ion Collider (RHIC) and the Large Hadron Collider (LHC), and signatures of QGP formation have been measured systematically over the past decades. In this talk, I will discuss the importance of identified particle observables and will elaborate on the next generation of measurements to be performed during the LHC Run 3 with the ALICE Experiment.

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