

ALICE looks at the sky

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The ALICE experiment at the CERN Large Hadron Collider was born to study the behaviour of QCD matter in the extreme conditions reached in relativistic heavy ion collisions. In these, the energy density is sufficiently high for quarks and gluons to be deconfined and travel over large distances, forming the so-called Quark-Gluon Plasma.

ALICE has also developed a strong physics programme in pp collision. There, ALICE measured for the first time an increase in the production of strange particles in high multiplicity events, a feature that was believed to be specific to AA collisions. On top of this, the quantity of matter and anti-matter produced at the LHC energies is about the same, de facto making LHC the perfect setup for anti-nuclei studies, for which ALICE's detector is optimized. These are powerful inputs to constrain models of cosmic rays, having repercussions also for dark matter searches.

This seminar will focus on the recent measurements of ALICE that affect the modelling of particle production in space.