

Title : Studies of jet quenching in the quark-gluon plasma with the CMS experiment at the LHC

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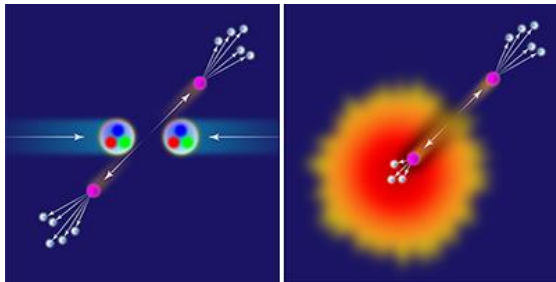
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Research Area: High Energy Physics

Methods: Data analysis, particle detection, machine learning

PhD track subject : Our group studies a novel state of matter known as the quark-gluon plasma, which existed in the early Universe, as well as in the core of compact astronomical objects. We produce this state via collisions of heavy ions, using the CMS experiment at CERN's Large Hadron Collider. We are particularly interested in a phenomenon known as jet quenching, whereby energetic quarks and gluons are attenuated as they cross the quark-gluon plasma. With this process we aim to understand the dynamics of strongly interacting matter in its deconfined phase, which is not otherwise accessible in the laboratory.



1: Illustration of a hard scattering event producing back-to-back jets, embedded in the quark-gluon plasma formed in a collision of heavy ions (@APS)

References:

Some accessible summaries of some of our results can be here:

<https://physics.aps.org/articles/v7/97>

<https://cms.cern/news/heavy-metal-hits-top>

The original articles are embedded.