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## Measuring EECs in small to large collision systems with ALICE

Energy-energy correlators (EECs) provide a powerful tool to study the evolution of scattered partons into finalstate hadrons. Defined as the energy-weighted cross section of the angle between particle pairs, EECs provide insight into the transition of the perturbative and non-perturbative regimes of Quantum Chromodynamics (QCD). Utilizing the ALICE precision charged-particle tracking, we present the evolution of the EECs across a variety of collision systems, measured down to low jet transverse momentum. In pp collisions, the angular dependence of the EEC cross section shows a distinct separation of the perturbative and non-perturbative regimes, revealing the partonic dynamics of jet formation and the confinement of partons into hadrons. In p– Pb collisions, the EECs can probe modifications to the dynamics of jet evolution in the presence of cold nuclearmatter effects. Finally, in Pb–Pb collisions, EECs probe the interactions of the jet with the quark-gluon plasma, highlighting the scale dependence of strong interactions in a many-body QCD system.

## Secondary track

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