

Upgrade of ALICE Electromagnetic Calorimeter to enhance di-jet measurements

Back-to-back jet produced by hard parton scatterings (di-jet) is a unique and powerful probe to quantify the properties of Quark Gluon Plasma at LHC.

In the ALICE experiment, the electromagnetic calorimeter (EMCal) provides a crucial role to reconstruct jets with a good energy resolution, together with the information by Time Projection Chamber (TPC).

In order to enhance the capability of back-to-back jet identification and yields of jets, photons, π^0 and their correlations,

we are constructing an additional electromagnetic calorimeter, called DCal (Di-jet Calorimeter) in ALICE.

DCal has the same design of EMCal, but it will be placed on the opposite side of the EMCal in azimuth at mid-rapidity $-0.7 \leq \eta \leq 0.7$, together with the Photon Spectrometer (PHOS).

In this poster, we present the physics cases of DCal by using simulation data, especially on jets, di-jets, hadron(π^0)-jets measurements.

The current status and plan of the DCal construction, and future perspectives will be shown.

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