

The Very High Momentum Particle Identification Detector at ALICE

Based on the results in the RHIC heavy ion experiments the identification of very high p_T particles seems to be extremely interesting at LHC energies. ALICE performs an excellent event by event PID below 5 GeV/c even in those high track densities. However, the track-by-track analysis of the heavy ion data demands further efforts on the experimental side.

We are presenting the idea of an ALICE upgrade detector which is capable to extend the particle identification into the momentum region of 5-25 GeV/c on track-by-track basis. The Very High Momentum Particle Identification Detector (VHMPID) is a gaseous Cherenkov detector, capable to distinguish charged pions, kaons and protons/antiprotons in the above momentum window in event by event. This feature gives us the possibility to study the meson/baryon anomaly, multi jet fragmentation function, in medium effects and the same-side and away-side jet correlations.

The talk is focused on design issues and technical aspects of such a detector, with present simulation and the prototype test results of the VHMPID.

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