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## Contribution of the High Momentum Particle Identification Detector (HMPID) to the ALICE physics program

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The ALICE apparatus is dedicated to collect data coming from pp, p-Pb and Pb-Pb collisions provided by LHC, to study the properties of strongly interacting matter under extremely high temperature and energy density conditions. For such a task, enhanced particle identification capabilities are requested. Among the other PID ALICE detectors, the ALICE-HMPID (High Momentum Particle Identification Detector) is devoted to the identification of charged hadrons, exploiting the Cherenkov effect. It consists of seven identical RICH counters, with liquid  $C_6F_{14}$  as Cherenkov radiator ( $n \approx 1.298$  at  $\lambda = 175$  nm). Photons and charged particles detection is performed by a MWPC, coupled with a pads segmented CsI coated photo-cathode. HMPID provides 3 sigmas separation for pions and kaons up to  $p_T = 3$  GeV/c and for kaons and protons up to  $p_T = 5$  GeV/c. In this way HMPID is able to contribute to inclusive hadrons spectra measurement as well as to measurements where high purity PID is required, by means of statistical or track-by-track PID, respectively. A review of the contribution given, so far, by the HMPID to the physics measurements in ALICE, performed with LHC RUN1 (2010-2013) and RUN2 (2015) data, such as inclusive charged hadrons yields and ratios as a function of transverse momentum, deuterons identification and jets compositions, are shown.

### Registered

Yes

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