HEAVY FLAVOUR PHYSICS IN ALICE

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With a centre of mass energy of 5.5 TeV per nucleon, Pb–Pb collisions at the CERN Large Hadron Collider (LHC) are expected to provide a copious yield of heavy quarks. Charm and beauty are produced at the early stages of nucleus–nucleus interactions therefore, thanks to their long lifetime on the collision timescale, they are sensitive and powerful probes of the medium formed in the collision.
The barrel tracking detectors of the ALICE apparatus will measure the momentum of the charged particles in the central rapidity range ($\eta < 0.9$) down to low p_T and will provide hadron and electron identification and an accurate measurement of the primary and secondary vertex positions. Muons will be detected by a dedicated spectrometer in the pseudorapidity region $-4 < \eta < -2.5$. With this combination of detection techniques, the ALICE experiment will study quarkonia both in the e^+e^- and in the $\mu^+\mu^-$ decay channels. Open heavy flavoured hadrons will be studied in the semileptonic decay channels both at central and forward rapidities. In addition, exclusive reconstruction of selected hadronic decay modes in the barrel acceptance will be feasible for charmed mesons.
After a general overview of the ALICE perspectives for heavy flavour physics, this talk will present some of the several physics analyses which have been developed and tested on data coming from detailed simulations of the apparatus.