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Heavy flavour measurements with ALICE in view of the inner tracker upgrade

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The ALICE experiment at the LHC studies Pb-Pb and pp collisions with the aim of investigating the properties of the high-density state of strongly-interacting matter, expected to be produced in Pb-Pb collisions.
Heavy quarks are sensitive probes to test the medium properties, since they are formed at shorter time scale with respect to the deconfined state.
The present measurements of the nuclear modification factor (R_AA) and azimuthal anisotropy of heavy flavour mesons are limited by the large combinatorial background, in the low pt region.
The measurements of heavy-flavour baryons, interesting to assess the thermalization of heavy quarks in the medium and discriminate among thermal and coalescence models, is difficult to be achieved with the current tracking and impact parameter resolution due to the small displacement (tens of microns for the case of the Lambda_c) of the decay tracks from the primary vertex.
The Upgraded Inner Tracking System will have greatly improved features in terms of: determination of the distance of closest approach (dca) to the primary vertex, standalone tracking efficiency at low pt, momentum resolution and readout capabilities. The large benefit of the upgraded detector on the heavy-flavour physics performance will be presented in this talk.

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