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Prospects for the ALICE muon physics with the Muon Forward Tracker upgrade

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During the second long shutdown of the LHC in 2019 the ALICE detector will be improved with the installation of a new Muon Forward Tracker (MFT). This detector will crucially contribute to the precise characterization of the high-temperature, strongly-interacting medium created in ultra-relativistic Pb-Pb collisions at $\sqrt{s_{NN}} = 5.5$ TeV. Covering the pseudo-rapidity range $2.5 < \eta < 3.6$, the MFT will be composed of six silicon pixel planes added in the acceptance of the existing Muon Spectrometer, upstream to the hadron absorber.

Detailed results on the expected physics performances of MFT will be given in central Pb-Pb collisions for various benchmark analyses, assuming an integrated luminosity of 10 nb^{-1} as expected for the LHC Run 3 (2020-2022). For the heavy-flavor physics, the focus is given on the measurement of open charm and beauty production (single muons from charm and beauty mesons and displaced J/ψ production from b down to zero p_T), as well as on the performances on the ψ' measurement down to zero p_T . Expected physics performances will be also shown for the measurement of low and intermediate mass dimuons, allowing the study of light neutral meson production and the thermal radiation from the QGP.

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