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Vector meson production in pp collisions at sqrt(s)=7 TeV, measured with the ALICE detector

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Low mass meson (ρ^0, ω, ϕ) production provides key information on the hot and dense state of strongly interacting matter produced in high-energy heavy ion collisions. Among them, strangeness enhancement can be accessed through the measurement of ϕ meson production, while the measurement of the ρ spectral function can be used to reveal in-medium modifications of hadron properties close to the QCD phase boundary. Vector meson production in pp collisions provides a reference for these studies. Moreover, it is interesting by itself, since it can be used to tune particle production models at the unexplored LHC energy range.

The ALICE experiment at the LHC can access vector mesons produced at forward rapidity through their decays in muon pairs, and at central rapidity in the di-electron decay channel. We present transverse momentum spectra of ϕ and ρ+ω mesons at forward rapidity in pp collisions at $\sqrt{s} = 7$˜TeV, as well as the ϕ absolute production cross section. We will also discuss the first signals and the analysis prospects for vector meson studies at forward rapidity in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$˜TeV.

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