Title: Study of strange particle production in jets with the ALICE experiment at the LHC

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Abstract: Quark–gluon plasma is a state of matter existing under extreme energy densities and temperatures where quarks and gluons are deconfined. Complex phenomena occurring in the plasma emerge from the strong interaction of its constituents. This hot and dense strongly interacting matter can be created in ultra-relativistic heavy-ion collisions and its properties can be studied by measuring particles produced in the collisions. Partons produced in hard scatterings interact with the medium which modifies the production of particles in jets. Measurements of spectra of identified particles produced in jets represent an important tool for understanding the interplay of various hadronization mechanisms which contribute to the particle production in the medium created in heavy-ion collisions. In this thesis, we present the measurement of the p_{T} spectra of Λ baryons and $\mathrm{K}^0_{\mathrm{S}}$ mesons produced in charged jets in central Pb–Pb collisions at the energy $\sqrt{s_{\mathrm{NN}}} = 2.76\,\mathrm{TeV}$, measured in the ALICE experiment at the LHC. The results of the analysis are used to discuss the origin of the enhancement of the baryon-to-meson ratio observed for the inclusive production of light-flavour particles in heavy-ion collisions.

Keywords: ALICE, heavy-ion collisions, jets, fragmentation, strange particles, baryon-to-meson ratio