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【444】Machine Learning for the ALICE Upgrade: Performance Enhancement of Dilepton Analyses

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ALICE, the dedicated heavy-ion experiment at CERN—LHC, will undergo a major upgrade in 2019/20. In this work, we analyze low-mass dielectrons in Pb—Pb collisions after this upgrade. These e^+e^- pairs are, for example, sensitive to the temperature of the collision system. Due to their small signal-to-background ratio, high-purity dielectron samples are required, which can be provided by traditional, cut-based analyses, however at the price of low signal efficiency. We aim to improve on existing methods by employing a multivariate approach to reject combinatorial background, conversion pairs and heavy-flavor contributions to the dielectron spectrum in a scenario involving the planned upgrade of the ALICE Inner Tracking System.

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