

Machine learning approach for studying dielectrons in LHC Run 3 data with ALICE

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The measurement of low-mass $e+e-$ pairs is a powerful tool to study the properties of the quark-gluon plasma created in ultra-relativistic heavy-ion collisions. Since such pairs do not interact strongly and are emitted during all stages of the collisions, they allow us to investigate the full space-time evolution and dynamics of the medium created. Thermal radiation emitted by the colliding system contributes to the dielectron yield over a broad mass range and gives insight into the temperature of the medium. The upgraded ALICE detector for LHC Run 3 gives unprecedented possibilities to measure the dielectron spectrum in pp and Pb-Pb collisions. Machine learning tools are nowadays widely spread in the field of particle physics and can help to improve the separation of signal and background events. In this poster I will present a machine learning approach based on boosted decision trees to identify electrons and discriminate contributions from different dielectron sources.

Alternate track

I read the instructions above

Yes

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