

Systematic studies of background subtraction under Σ^0 mass peak measured at LHC with ALICE in pp collisions at $\sqrt{s} = 13\text{TeV}$

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The Σ^0 hyperon is reconstructed via its electromagnetic decay into $\Lambda + \gamma$ due to the unique ability of ALICE to register low-energy photons.

Different methods of background subtraction for the measurement of the yield of Σ^0 hyperon invariant are investigated. It is done by the approximation of the background shape by the polynomial function and the application of the mixed background technique with Lambda hyperon taken from one event and photon from another. For the mixed background, the counting regions of the signal events were varied. A comparison of the methods has been conducted.

The Σ^0 hyperon yields are presented in different transverse momentum regions with corresponding systematic uncertainties.

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