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Investigating the hidden strangeness content of exotic resonance with ALICE

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The investigation of the quark content of hadrons has been a major focus of nonperturbative strong interaction models. The basic quark model describes baryons as composed of three quarks/antiquarks and mesons as a quark-antiquark pair. However, in the last decade, several resonances have been observed in the mass range 900-2000 MeV/ c^2 (e.g. $f_0(980)$ and $f_1(1285)$) that could have exotic quark compositions. Theory predicts it can be a linear composition of two u and d quarks or can have hidden strangeness to form tetra-quark hadrons or hadrons with hybrid structure.

The excellent particle identification capabilities of the ALICE detector along with the large data sample collected in pp and p-Pb collisions provide an opportunity to explore the high mass resonances. This study reports the first measurement of production cross section of f_1 and f_0 resonances in pp and p-Pb collisions at the LHC energies. The measurements of yields will be presented and will be compared to the statistical hadronization model (SHM) to shed light on the hidden strange content of these resonances. In addition to that, a multiplicity dependent study of f_0 resonances will be presented to search for the possible rescattering effect in the hadronic phase of high multiplicity pp and p-Pb collisions.

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