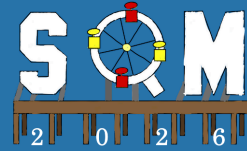


The 22nd International Conference on
Strangeness in Quark Matter
 22-27 March, 2026, Los Angeles, CA



Contribution ID: 84

Type: **Poster Presentation**

Glueball search in pp collisions at $\sqrt{s} = 13.6$ TeV with the ALICE detector

Tuesday, 24 March 2026 18:24 (1 minute)

Quantum Chromodynamics (QCD) predicts the existence of gluonic bound states known as \textit{glueballs}, composed entirely of gluons. Their experimental identification remains elusive due to possible mixing with nearby scalar mesons. The high-statistics proton–proton data at $\sqrt{s} = 13.6$ TeV recorded with the ALICE detector provide a new opportunity to explore such states. In this work, resonances reconstructed via the $K_S^0 K_S^0$ decay channel are studied at midrapidity. Masses and widths are extracted and compared with lattice-QCD predictions for the lightest scalar glueball candidate. Transverse-momentum spectra and yields are measured to investigate the production mechanism of these states. These measurements provide new insights into the search for glueballs in high-energy collisions.

Author: Mr SAWAN, Sawan (National Institute of Science Education and Research (NISER) (IN))

Presenter: Mr SAWAN, Sawan (National Institute of Science Education and Research (NISER) (IN))

Session Classification: Poster Session