



Contribution ID: 568

Type: **Parallel session talk**

Exotic spectroscopy at LHCb: status and prospects

Thursday 24 August 2023 08:30 (12 minutes)

The quark model predicts exotic hadrons beyond the conventional quark-antiquark mesons and three quark baryons. Exotic candidates have since been observed in the early 2000's. Since then several exotic states have been discovered. LHCb has reported on tetraquark candidates such as the $X(3872)$, the discovery of pentaquark resonances in 2015, and the first double charmed tetraquark. Many theoretical approaches, including hadronic molecules and tightly bound tetra- and penta-quarks, aim to describe the nature and properties (mass/quantum numbers) of these states, also predicting that these exotic candidates may be part of a larger multiplet of exotic states. The discovery of further exotic hadrons and measurement of their properties will help to scrutinize these theoretical models and determine the internal structure of these states. LHCb is in a unique position to study a wide range of decay modes for multiple b-hadron species. The latest results of these studies from LHCb are presented along with prospects for the Run 3 data.

Collaboration / Activity

LHCb

Co-author: VOS, Keri

Presenter: ROBERTSON, Gary (University of Glasgow)

Session Classification: T06 QCD and Hadronic Physics

Track Classification: QCD and Hadronic Physics