

ID de Contribution: 71

Type: **Talk**

## Antihelium identification and antihypertriton observation with LHCb

*mercredi 5 juin 2024 08:30 (20 minutes)*

The production of helium and anti-helium nuclei is studied for the first time with the LHCb detector in pp collisions at  $\sqrt{s} = 13 TeV$ . The used dataset was collected between the years 2016 to 2018 and corresponds to an integrated luminosity of  $L = 5.5 fb^{-1}$ . The helium nuclei are identified using ionization losses in the silicon sensors of the VELO and ST detectors, alongside timing measurements in the OT drift tubes. A total of  $10^5$  prompt helium and anti-helium are identified with negligible background contamination. First application of this method is the reconstruction of hypertritons via the 2-body decay into Helium-3 and a charged pion. A total of  $10^2$  hypertriton candidates are found. This example proves the feasibility of a rich program of measurements of QCD and astrophysics interest involving light nuclei.

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**Classification de Session:** Track3-Res&Hyp

**Classification de thématique:** Resonances and Hyper-nuclei