

## Strangeness in Quark Matter 2019



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# Shedding light on the hyper-triton lifetime puzzle with ALICE at the LHC

*Thursday 13 June 2019 14:20 (20 minutes)*

The measurement of the hyper-triton lifetime with the ALICE detector at the LHC is presented to address one of the open key questions of hypernuclear physics: the hyper-triton lifetime puzzle.

The Pb-Pb dataset collected during the LHC Run 2 at  $\sqrt{s_{NN}} = 5.02$  TeV allows for a systematic study of light (anti-)hypernuclei production in heavy-ion collisions, in particular, for the hyper-triton lifetime determination, thus complementing the results obtained at lower energy ( $\sqrt{s_{NN}} = 2.76$  TeV).

The analysis has been carried out exploiting the excellent particle identification performance by measuring the energy loss in the Time Projection Chamber. In addition, the Inner Tracking System is used to discriminate secondary vertices, originating from weak decays, from the primary vertex. This is of particular importance for the measurement of (anti-)(hyper-)triton, which decays weakly with a decay length of several centimetres.

The study of (anti-)(hyper-)triton production in Pb-Pb collisions at both energies available at the LHC will be discussed and compared.

### Collaboration name

ALICE Collaboration

### Track

Strangeness and Light Flavour

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