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## Search for the rare decay $\Omega_b^- \rightarrow \Omega^- \mu^- \mu^+$ at the LHCb experiment

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Rare decays of heavy-quark hadrons provide a powerful way to probe indirectly for presence of phenomena beyond the Standard Model of particle physics.

At the LHCb experiment several  $b \rightarrow s\ell\ell$  transitions, such as the rare decays  $B \rightarrow K\ell\ell$  or  $B \rightarrow K^*\ell\ell$ , have been studied. They show tensions towards the Standard Model predictions in several observables, such as lepton universality ratios ( $R_K, R_{K^*}$ ) or angular observables. So far most of the measurements have been focused on mesons and the  $\Lambda_b$  baryon. To improve the understanding of the anomalies and widen the available knowledge, it is crucial to study  $b \rightarrow s\ell\ell$  transitions for other weakly decaying baryons as well.

Therefore, the primary aim of the presented analysis is to observe the decay  $\Omega_b^- \rightarrow \Omega^- \mu^- \mu^+$ . If successful, the branching ratio relative to the decay  $\Omega_b^- \rightarrow \Omega^- J/\Psi (\rightarrow \mu^- \mu^+)$  will be measured.

The used data set corresponds to an integrated luminosity of  $9 \text{ fb}^{-1}$ , which has been collected with the LHCb experiment from 2011 to 2018. In this talk the current status of the analysis is presented.

### Category

Particle / Astroparticle / Cosmology (Experiment)

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