



Contribution ID: 24

Type: Regular Talk (15'+5')

## Preliminary results for the Dalitz plot analysis of the $D^+ \rightarrow K^- K^+ K^+$ decay using the Multi-meson model

Friday 2 December 2022 12:45 (20 minutes)

This work presents the selection of the  $D^+ \rightarrow K^- K^+ K^+$  candidates and progress in the amplitude analysis of this decay using the Multi-meson model (Triple-M), a model based on an effective chiral Lagrangian. The study is based on a sample of  $pp$ -collision data, collected at a centre-of-mass energy of 13 TeV with the LHCb detector between 2016 and 2018. The results of the amplitude analysis using the latest version of the Multi-meson model are expected to give hints towards a more solid theoretical understanding of heavy-meson decays into three mesons. In particular, the  $K^+ K^-$  scattering amplitudes for the combinations of spin (0,1) and isospin (0,1) of the two-body system may be obtained from a Dalitz plot fit using the decay amplitude derived with the Triple-M.

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**Session Classification:** QCD and Heavy Flavours

**Track Classification:** LHC-1