



Contribution ID: 79

Type: **Parallel session**

Searches for singly- and doubly-charged Higgs bosons in ATLAS

Wednesday, 29 November 2023 14:40 (15 minutes)

In the Standard Model, one doublet of complex scalar fields is the minimal content of the Higgs sector in order to achieve spontaneous electroweak symmetry breaking. However, several theories beyond the Standard Model predict a non-minimal Higgs sector and introduce charged scalar fields that do not exist in the Standard Model. As a result, singly- and doubly-charged Higgs bosons would be a unique signature of new physics with a non-minimal Higgs sector. As such, they have been extensively searched for in the ATLAS experiment, using proton-proton collision data at 13 TeV during the LHC Run 2. In this presentation, a summary of the latest experimental results obtained in searches for both singly- and doubly-charged Higgs bosons are presented.

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Session Classification: Parallel: BSM