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Inclusive Higgs- \rightarrow bb/cc with Run 2 data from LHCb

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LHCb is a spectrometer that covers the forward region of proton-proton collisions, in the pseudo rapidity range from 2 to 5. Thanks to its excellent vertex reconstruction system, it has already demonstrated its capability to identify heavy flavour jets. Moreover, the b- and c-jet identification is a crucial ingredient for the search of $H \rightarrow bb$ and $H \rightarrow cc$ at LHCb. In this talk, new methods used at LHCb based on machine learning techniques that exploits the jet substructure will be presented. Particularly, the focus will be on dijet mass regression and jet flavour identification. These new methods are applied to search for $H \rightarrow bb$ and $H \rightarrow cc$ using Run 2 data. New results and prospects for inclusive searches for $H \rightarrow bb$ and $H \rightarrow cc$ at the LHCb experiment will be presented.

Secondary track

Author: COLLABORATION, LHCb**Session Classification:** T08**Track Classification:** T08 - Higgs Physics