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## Studies of multibody charmless B decays at LHCb

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Charmless multibody B decays proceeding through the quark transitions  $b \rightarrow q \bar{q} s(d)$  are relevant laboratories to study both direct and mixing-induced CP violation effects and to search for deviations from Standard Model expectations. The  $1.0 \text{ fb}^{-1}$  of data recorded by the LHCb experiment in 2011 have been analyzed to reconstruct  $B^+$ ,  $B^0$  and  $B_s^0$  decays in various multibody final states. We report direct CP-violation studies in three-body charged B decays, reconstruction of neutral B mesons in three-body decays with a  $K^0_S$  meson in the final state and amplitude analyses of B decays into two intermediate vector particles such as  $B^0 \rightarrow \phi K^{*0}$  or  $B_s^0 \rightarrow \phi \phi$ .

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