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## Direct decay of the Higgs boson into $B_c$ and $B_c^*$ mesons

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### Abstract

The exclusive decays of the Higgs boson into  $B_c$  and  $B_c^*$  mesons are being studied using the fragmentation approach. One of the dominant modes of the Higgs boson decay in the Standard Model is its decay into  $b\bar{b}$  pairs, which then directly decay into  $B_c$  and  $B_c^*$  mesons. In this article, the branching ratio and decay widths of the SM Higgs boson to the  $B_c$  and  $B_c^*$  mesons have been calculated by directly fragmenting the anti-quark  $\bar{b}$  within the framework of perturbative Quantum Chromodynamics (pQCD) at leading order (LO). The results of these calculations are in very good agreement with those obtained by other authors.

**Keywords:** Higgs boson, branching fraction, decay widths, fragmentation

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For full article, refer to the Persian section