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Production of heavy meson-pairs at proton-antiproton collisions within a double handbag approach

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We study the pair-production of heavy mesons in proton-antiproton annihilations within a perturbative QCD motivated framework [A.T. Goritschnig, B. Pire and W. Schweiger, Phys.Rev. D87 (2013) 014017]. In particular we investigate $p \bar{p} \rightarrow \bar{D}^0 D^0$ within a double handbag approach, where the hard process $u \bar{d} \rightarrow \bar{c} c$ factorizes from soft matrix elements of $c \bar{q} q$ operators. The soft matrix elements can be parameterized by transition distribution amplitudes, which are off-diagonal in flavor space. The transition distribution amplitudes are modelled by representing them as overlaps of light-cone wave-functions (where we have treated the proton within a quark-diquark picture). We obtain rather robust model results for $p \bar{p} \rightarrow \bar{D}^0 D^0$ cross sections, which are also expected to be measured at the future PANDA detector at GSI-FAIR.

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