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”Are there quirks in the $D \rightarrow \pi \ell^+ \ell^-$ decays ?”

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Our ability to trace new physics in the $c \rightarrow u \ell^+ \ell^-$ transitions by measuring the $D \rightarrow \pi \ell^+ \ell^-$ decay width critically depends on the accurate knowledge of this decay amplitude, dominated by an overlap of a singly Cabibbo suppressed weak decay and electromagnetic lepton pair emission.

We calculate this amplitude, combining LCSRs with hadronic dispersion relation, and present our preliminary results for the differential width. We also demonstrate that an additional knowledge can be gained, measuring Cabibbo favoured and doubly suppressed $D_{(s)} \rightarrow P \ell^+ \ell^-$ modes ($P = \pi, K, \eta$) which share common hadronic dynamics with $D \rightarrow \pi \ell^+ \ell^-$ and are also related to the latter by the U-spin symmetry.

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