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A comparison of Wilson and twisted mass valence quarks for charmed semileptonic form factors

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We present the comparison of preliminary results of $D \rightarrow \pi$ semileptonic decays from two related projects: the first one is based on unitary Wilson fermions, and the second uses valence quarks rotated to maximal twist. While these projects differ by their goals and strategies, both studies are performed on CLS $N_f = 2 + 1$ configurations, with similar analysis techniques. The universality test can then be used as a non-trivial validation of our calculations, in particular regarding the notoriously difficult control of excited state contributions to form factors. Finally, we will discuss the scaling of these two fermionic actions, compared to their theoretical merits, with a focus on $O(am_c)$ and $O(ap)$ lattice artefacts.

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