

## SCET Workshop 2022



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## Weak annihilation in non-leptonic $B$ decays

Exclusive non-leptonic  $B$ -meson decays provide a precision laboratory for tests of flavour-changing weak transitions. While the factorization of the decay amplitude is well understood in the heavy-quark limit since more than two decades, very little is known so far about power-corrections. One particular class of such suppressed effects are the so-called weak-annihilation topologies. With the recent advances in the theoretical understanding of sub-leading power SCET, we investigate the factorization of these effects in the annihilation dominated charmless decay  $B_d \rightarrow K^+ K^-$ .

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