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## Heavy $\rightarrow$ strange Semileptonic Decays in Lattice QCD

Wednesday 16 December 2020 14:30 (30 minutes)

$D \rightarrow Kl\nu$  and  $B \rightarrow Kl^+l^-$  are important heavy to strange semileptonic decay processes, giving us direct comparison with experiment, and access to CKM matrix elements and potential new physics.

We can calculate form factors for both of these processes in lattice QCD and connect them together by determining heavy to strange form factors for heavy quark masses ranging from  $c$  to  $b$ . We can also explore the connection to form factors with different light quark masses.

Using the HISQ action on  $N_f = 2 + 1 + 1$ , we demonstrate how  $D \rightarrow K$  calculations can be extended up towards the  $b$  mass and give preliminary  $D \rightarrow K$  and  $B \rightarrow K$  results, in both cases including results for the tensor form factor with an accurately renormalised tensor current.

### Would you be interested in receiving feedback on your talk?

No

### Will you be pre-recording your talk?

No

### Length of talk

15-25 minutes

### Are you happy for your talk to be recorded?

Yes

**Author:** PARROTT, William (University of Glasgow)

**Presenter:** PARROTT, William (University of Glasgow)

**Session Classification:** Parallel Stream 1