

**$B \rightarrow \pi \ell \nu$  and  $B \rightarrow \pi \ell \ell$  decays with HISQ/NRQCD valence quarks on  $N_f = 2 + 1$  asqtad ensembles.***Friday, July 27, 2018 4:50 PM (20 minutes)*

We discuss a calculation of the form factors for the flavor-changing charged current  $b \rightarrow u$  and the flavor-changing neutral current  $b \rightarrow d$  semileptonic decays,  $B \rightarrow \pi \ell \nu$  and  $B \rightarrow \pi \ell \ell$ . HISQ light and NRQCD  $b$  valence quarks are simulated on the MILC  $N_f = 2 + 1$  asqtad ensembles, including pion momenta that cover the full kinematic range of the decay. These data are analyzed using a hard pion ChPT motivated modified  $z$ -expansion developed in previous work. Preliminary results and phenomenological implications are discussed.

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