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# **B<sub>c</sub> decays from highly improved staggered quarks and NRQCD**

*Tuesday, 3 May 2016 12:25 (5 minutes)*

We use both non-relativistic QCD (NRQCD) and fully relativistic formalisms to calculate semileptonic form factors for the decays  $B_c \rightarrow \eta_c \ell \nu$  and  $B_c \rightarrow J/\psi \ell \nu$  over the entire  $q^2$  range. To achieve this we employ a highly improved lattice quark action and at several lattice spacings down to  $a=0.044$  fm, which allow a fully relativistic treatment of charm and simulation of the full  $q^2$  range with controlled continuum extrapolation. We have two ways of treating the b quark: either with an  $O(\alpha_s)$  improved NRQCD formalism or by extrapolating a heavy mass  $m_h$  to  $m_b$  in the relativistic formalism. We find good agreement between these approaches which provides an important cross-check of our results.

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