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## Improved Semileptonic Form Factor Calculations in Lattice QCD

*Tuesday, 15 June 2010 18:00 (5 minutes)*

We investigate two alternatives to the Sequential Propagator Method used in Lattice QCD calculations of heavy-light semileptonic form factors. In the first method, which we refer to as the Stochastic Propagator Method, we replace the sequential propagator with a stochastic all-to-all propagator. In the second method, we employ the so called “one-end trick”. After minimizing the stochastic noise we compare the three methods using two  $N_f=2$  ensembles with non-perturbatively  $O(a)$  improved Wilson fermions. The Stochastic Propagator Method results in the most efficient approach for any realistic calculation. We present  $O(a)$  improved, matched lattice results on a single ensemble using this approach.

In a complementary effort, we present preliminary  $O(a)$  improved, matched results for  $f_D$  and  $f_{D_s}$  on three ensembles with the same action as those above. Standard point-to-all propagators are used. We perform a chiral extrapolation for  $f_D$  and  $f_{D_s}$  with sea pion masses as low as  $\sim 170$  MeV.

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