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SU(3)-breaking effects and induced second-class form factors in hyperon beta decays from 2+1 flavor lattice QCD

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We discuss the effects of SU(3) symmetry breaking measured in hyperon semileptonic decays from fully dynamical lattice QCD. Our calculations are carried out with gauge configurations generated by the RBC and UKQCD collaborations with (2+1)-flavors of dynamical domain-wall fermions and the Iwasaki gauge action at two couplings, ¥beta= $2.13 and 2.25. We have estimated the value of the hyperon vector couplings$f_1(0)$ with an accuracy of less than$ ¥rightarrow N $decay. This discrepancy can be attributed to an assumption made in the experimental analysis on$|V_{us}f_1(0)|$, where$ $class form factor$g_2$ is set to be zero. We will therefore report on this matter and show the preliminary results of$g_2(0)$$ evaluated in both indirect and direct ways.

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